

1479

Genus Vitraria Jordan and Evermann

Vitraria Jordan and Evermann, Bull.
U. S. Fish Comm., vol. 22, p. 205, 1902
(1903). (Type Vitraria clarescens
Jordan and Evermann, monotypic.)

Body slender, compressed, elongate,
transparent. Head small, conic.
Snout pointed in profile. Eyes
large, advanced, in front half
of head. Maxillary extends
below eye. Jaws prominent,
upper little produced. Teeth
little evident or minute. Gill
opening lateral, small. Scales
small, thin, feeble. Head largely
naked. Nostrils well separated,
anterior near middle in snout
length, posterior close before eye.
Dorsals well separated, first
dorsal small with 7 spines,

second dorsal with 11 rays. 1480
Anal rays 11. Caudal emarginate.
Pectoral rather large, rays not
detached. Ventrals united,
small, below pectoral.

Small translucent ^{nt} little
gobies of the tropical coral
reefs, chiefly in the South Seas.

Awaous genivittatus (Valenciennes,

Gobius genivittatus Valenciennes, Hist.
Nat. Poiss., vol. 12, p. 4864, 1837
(type locality, Tahiti). (Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 13, 1861 (reference);
Journ. Mus. Godeffroy, vol. 6, pt. 11,
1877, p. 170, pl. 110, fig. C (Tahiti;
Fiji; Samoa; Hawaii); Rep. Voy.
Challenger, vol. 1, pt. 6, p. 44, 1880
(fresh water Api, New Hebrides).
Seale, Occas. Pap. Bishop Mus., vol.
1, no. 5, p. 17, 1902 (Honolulu).
Weber and Beaufort, Nova Caledonia,
Sarsin and Roux, Zool., ser. 2, vol.
1, p. 37, 1915 (Tchabalabel, Aubatche).

Kivitus genivittatus Schmeltz, Cat. Mus.
Godeffroy, no. 4, 1869, p. 18 (Pelew
Islands; Viti Levu).

1481

Vitraria clarescens Jordan and
Evermann

Vitraria clarescens Jordan and
Evermann, Bull. U. S. Fish Comm., vol.
22, p. 205, 1902 (1903) (type locality,
Hilo); vol. 23, pt. 1, p. 486, pl. 60,
1903 (1905) (type) — Jordan and
Seale, Bull. Bur. Fisher., vol. 25,
p. 406, 1905 (1906) (reference). —
Fowler and Ball, Bull. Bishop
Mus., no. 26, p. 27, 1925 (Lisiansky;
Pearl and Hermes Reef); no. 38,
p. 29, 1927 (Tangareva); Mem. Bishop
Mus., vol. 10, p. 414, 1928 (Honolulu;
Hilo; Lisiansky; Pearl and Hermes
Reef; type).

1492

Depth $6\frac{4}{5}$ to 7; head 4 to $4\frac{2}{3}$, width $1\frac{7}{8}$ to 2. Snout $4\frac{1}{4}$ to $4\frac{1}{2}$ in head; eye $3\frac{1}{2}$ to 4, greater than snout, subequal with interorbital; maxillary reaches front eye edge to $\frac{1}{4}$ in eye, length $2\frac{4}{5}$ to $3\frac{3}{4}$ in head; mouth cleft short, oblique, begins little below level of lower edge of pupil, mandible shorter and included in upper jaw; interorbital 3 to $3\frac{1}{8}$, flattened, eye touching upper profile line.

Scales 55 to 58 in lateral series, of which 3 on caudal base, 13 transversely; predorsal 14 to 16 forward over opercle, head otherwise naked.

D. VI or VII - 10 or 11, second spine $2\frac{1}{8}$ to $2\frac{1}{4}$ in head, third ray $1\frac{3}{5}$ to $1\frac{2}{3}$; A. 9 or 10, third ray $1\frac{3}{5}$ to $1\frac{2}{3}$; caudal $4\frac{1}{5}$ to

1483

$4\frac{1}{4}$ in rest of fish, emarginate;
least depth of caudal peduncle
 $2\frac{2}{3}$ ^{in head}; pectoral $1\frac{1}{4}$ to $1\frac{1}{2}$, rays
16 or 17; ventral rays I, 5, fin
 $1\frac{3}{4}$ to $1\frac{7}{8}$ in head.

Very pale brown, translucent,
below paler. Back with 6 or 7
slightly darker blotches, extend
on sides narrowing downward to
point to near median axis of
body. Fins pale or transparent.
Polynesia, Hawaii.

U. S. N. M., no. 50655. Hilo, Hawaii.
Bureau of Fisheries. Length 30 mm.
Type.

U. S. N. P., no. 24223. Hilo, Hawaii.
Bureau of Fisheries. Length 30 mm.
"Cotype" [= paratype].

Genus Cryptocentroides Popta

1484

Cryptocentroides Popta, Zool. med. Leiden,
vol. 7, p. 32, 1922. (Type Cryptocentroides
dentatus Popta, monotypic.)

Depth $7\frac{1}{5}$ to $7\frac{1}{2}$; head 3 to $3\frac{1}{3}$, width 2 to $2\frac{1}{8}$. Snout $3\frac{1}{4}$ to $3\frac{1}{3}$ in head from snout tip; eye 4, equals snout, 4 times interorbital; maxillary reaches $\frac{1}{5}$ to $\frac{1}{4}$ in eye, length $2\frac{2}{5}$ to $2\frac{1}{2}$ in head from snout tip; teeth small, simple, biserial in jaws, with inner upper largest, none on palate or tongue; tongue with median notch in front; interorbital narrowly constricted, level. Gill rakers 2 + 8, lanceolate, $1\frac{1}{4}$ in gill filaments, which $2\frac{1}{2}$ in eye.

Scales 30 + 2 or 1 in median lateral series; 10 transversely, 13 or 14 predorsal forward opposite vertical edge of preopercle. Except occipital region, head entirely naked. Check with 4 horizontal rows of papillae, row around orbit, 1 postocular, 1 across preorbital, 1 on each mandibular ramus below range

Carinigobius new subgenus

Type — Amblygobius insignis

Scale

Body elongate, well compressed.
Head moderate, compressed.
Snout short, oblique. Eye
large, elevated, entering upper
profile, close together. Maxillary
extends below front of eye,
oblique. Mouth rather small,
lower jaw little protruded.
Teeth in bands in jaws, outer
row little enlarged, and small
recurved canine each side below.
Interorbital very narrow. Gill
opening lateral, but little
greater than depth of pectoral
base. Head and predorsal
scaleless, latter with median
low ridge or keel forward until
shortly behind eyes. Scales
small on trunk, larger on tail,

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where stenoid, especially so before
caudal base. First dorsal with
6 spines. Second dorsal with
spine and 13 ^{to 14} rays. Anal with
spine and 12 ^{to 14} rays, like second
dorsal. Caudal ^{shorter or subequal with head.} rounded, Pectoral
shorter than head. Ventral
little shorter than pectoral, with
broad membrane in front basally,
fins entirely united. Body
with dark oblique cross bands,
inclined downward and backward.
Dark blotch at suprascapula.
Head and trunk with scattered
dark dots. Terminally on each
membrane of soft dorsal black
streak parallel with fin rays.

distinguished by the
nuchal keel, in combination
with the unusual color pattern.

~~Type. -~~ Acantheleotris margaritifer new species

Body elongate, well compressed. Head moderate, obtuse, compressed. Muzzle short, obtuse, declivous. Eye large, high, well advanced in head. Mouth terminal, small, reaches below front of eye, jaws about equal. Teeth minute, firm in bands in jaws. Tongue with front margin truncate, entire. Interorbital narrow bony ridge. Preopercle with a long, free simple spine, long as eye, directed back and slightly upward. Gill opening lateral, transverse, before pectoral. Head and front of back naked. Trunk, tail and caudal base covered with ctenoid scales, small on latter and large on body. Two dorsals, first of 6 flexible spines of which one or more of median may be extended in slight free filaments; soft dorsal with spine and 11 rays. Anal rays I, 9, and last rays like last dorsal rays extended at long points to fins. ^{/caudal} C moderate, longer than head and ends in median point behind. Pectorals and ventrals longer than caudal, subequal, and ventrals well divided.

Unique in the large conspicuous preopercular spine, in combination with the scaleless head and predorsal region, long pointed fins and the pleasing coloration.

1472

There is very little question that Brachyelectris Tensifera Bleeker is identifiable with Herre's recent Gladiogobius. Bleeker erroneously placed ~~Brach~~ it with the electrids, his small specimen only 29 mm. long ~~was~~ so poorly preserved that he was unable to supply any details of the coloration. Herre unknowingly proposed the same specific name for his genotype.

1473

Gladiogobius ensifer (Bleeker)

Brachyleotris ensifera Bleeker,
Verslag. Med. Kon. Akad. Wet.
Amsterdam, ser. 2, vol. 8, p. 375, 1874
(type locality, Bunn, Kajali, in
Mauri); Arch. Néerl. Sci. Nat.
Harlem, vol. 10, p. 106, 1875 (name
only).

~~Gladiogobius ensifer Herre~~

1474

Gladiogobius ensifer Herre, Copeia,
no. 1, p. 23, April 3, 1933 (type locality,
near the entrance to Majalibit
Inlet, Waigiu, Culiou, Philippine
Islands); Fisher Herre 1931 Philip-
pine Exped., p. 87, 1934 (Culiou);
Roxas and Martin, Dep. Agric. Comm.,
Manila, Tech. Bull. 6, p. 238, 1937
(reference).

Philippine Journ. Sci., vol. 59, no. 3, p.
369, March 1936 (tide flats at
Bais, Oriental Negros).

~~(" spine + Electris.)~~

~~Acanthelectris margaritifer new species.~~

Depth $4 \frac{1}{2}$ to $4 \frac{3}{5}$; head $3 \frac{1}{3}$ to $3 \frac{2}{5}$, width $1 \frac{4}{5}$ to 2.

Snout 4 to $4 \frac{1}{2}$ in head; eye $3 \frac{3}{4}$ to 4, greater than snout and greatly exceeds narrow interorbital; maxillary reaches $\frac{1}{2}$ in eye, length 3 in head; teeth simple, conic, close set, in narrow bands in jaws; interorbital very narrow low ridge, width $\frac{1}{4}$ of eye; long, conspicuous preopercular spine subequal with to slightly longer than eye. Gill opening lateral slit, about $2 \frac{1}{2}$ in head.

Scales 20 or $21 + 2$ in axial lateral series from behind suprascapula; 9 transversely above anal origin. Head, chest, breast, prepectoral and predorsal regions naked. Scales with 9 to 15 basal radiating striae; 25 to 36 apical denticles, uniserial, graduated larger laterally; circuli very fine.

D. VI $+$ I, 10, $\underline{\underline{1}}$ or $\underline{\underline{I}}$, 11, $\underline{\underline{1}}$, spines flexible terminally and third reaches back to middle of soft dorsal, tenth or eleventh branched ray also extended or ending in long filament which may reach middle of caudal; A. $\underline{\underline{I}}$, 9, $\underline{\underline{1}}$, and last ray filamentous like last dorsal ray or may reach $\frac{1}{3}$ in caudal; caudal subequal in young, to $2 \frac{1}{2}$ in

rest of fish with age and ending in median filament behind; least (1476
depth of caudal peduncle $2 \frac{1}{8}$ to $2 \frac{1}{2}$ in head; pectoral $2 \frac{7}{8}$ to 3
in fish without caudal, rays 15; ventral rays I, 5, fin 3 to $3 \frac{1}{8}$
in fish without caudal.

Pale brown, whitish on under surface of head and belly.
Top of head with numerous, small, close set slightly darker crowded spots.
Along back 7 darker brown blotches, with 5 larger and brighter axial
brown blotches on side, last small and at caudal base medially. Each
scale on side of body with slightly darker basal spot. Dark brown shade
on cheek below eye. Side of head, prepectoral region and whole side
of body more or less, with small round pearl blue spots, those on head
and anterior part of body little ocellated with narrow brown line. Fins
all gray white, with dark blotches on back reflected on bases of dorsals.
Iris gray white.

Philippines. A handsome ornate little fish, remarkable not
only for its long preopercular spine but its filamentous fins as well.

U. S. N. M., No. 99047, Nasapit, tide pool, Mindanao, August
1, 1907. Length 42 mm. ~~Type.~~

Also the following paratypes:

Eighty examples, same data. Length 21 to 40 mm.

Two examples. Mactan Island, tide pools. August 31, 1909.

Length 33 to 47 mm.

One example. Reef opposite Cebu. April 5, 1908. Length

30 mm.

(~~pearl + fero to bear, with reference to the~~
~~pearl colored spots.)~~

U. S. N. M., no. 99041. Reef opposite
Cebu. April 5, 1908. Albatross
Expedition. Length 31 mm.

U. S. N. M., no. 99042. Mactan
Island, tide pools. August 31,
1909. Length 32 to 47 mm. Two
examples. Albatross Expedition.

U. S. N. M., no. 99043. Masapit,
Mindanao. August 1, 1909. Length
23 to 40 mm. Eighty examples.
Albatross Expedition.

U. S. N. M., no. 99047. Masapit,
Mindanao. August 1, 1909.
Albatross Expedition. ~~August 1, 1909.~~
Length 41 mm.

Cryptocentroides
~~*Amblygobius*~~ *insignis* (Seale)

Amblygobius insignis Seale, Philippine Journ. Sci., vol. 5, No. 2, p. 116, pl. 2, fig. 2, 1910 (type locality, Polillo). - HERRE, Gobies of Philippines, p. 234, pl. 18, fig. 3, 1927 (Bantayan Island; Polillo); Journ. Pan-Pac. Res. Inst., vol. 6, No. 4, p. 9, Oct.-Dec, 1931 (Hathorne Sound, Solomons). - FOWLER, Mem. Bishop Mus., vol. 11, No. 6, p. 444, 1934 (reference). - HERRE, Fish. Herre, 1931 Philippine Exped., p. 90, 1934 (Sitanki; Jolo). - ROXAS and MARTIN, Depart, Agric. Comm. Manila, Tech. Bull. 6, p. 231, 1937 (reference).

Cryptocentroides insignis Koumans, Zool. Meded. Rijks. Mus. Hist. Nat. Leiden, p. 144, 1935 (type of Gobius Cryptocentrus insignis).

1488

~~Cryptocentrus~~^{roides} ~~stigmatophorus~~ (Beaufort)

Gobius (Cryptocentrus) stigmatophorus
Beaufort, Zool. Anzeiger, vol. 39, p. 136,
1912 (type locality, ^{Reef at} Vaonek, Waigiu);
Bijdr. Dierk. Amsterdam, vol. 19, p. 141,
1913 (type).

Cryptocentroides stigmatophorus Gofta,
Zool. Med. Leiden, vol. 7, p. 35, 1922
(reference).

Cryptocentrus stigmatophorus Fowler,
Mem. Bishop Mus., vol. 10, p. 414, 1928
(copied).

1489

Cryptocentroides dentatus Popta

Cryptocentroides dentatus Popta,
Zool. Med. Leiden, vol. 7, p. 32, 1922,
(type locality, "Raha auf Muna").
— ^{Fishes} Herre, Herre 1931 Philippine Exped.,
p. 91, 1934 (Sitanki). — Roxas and
Manton, Depart. Agric. Comm. Manila,
Tech. Bull. 6, p. 236, 1937 (reference).

Depth ^{5 to} $5\frac{2}{5}$; head $3\frac{3}{4}$, width
 $1\frac{2}{3}$. Snout $3\frac{5}{8}$ in head; eye
^{3 to 4} $5\frac{1}{6}$, eyes closely set; ^(to half way up eye) mouth
^{maxillary reaches below front eye eye;} cleft small, oblique; lips wide;
tongue rounded; upper teeth
in band, fine, outer row enlarged,
with ^{4 to 8} median largest, ^{each side} and
similar lower teeth with 12
outer larger canines; front nostril
in short tube. Gill rakers 13.
elongate.

1490

580

205 Scales 70 in lateral series;
30 transversely between second
dorsal and anal. Anteriorly
on body scales very small and
cycloid, posteriorly larger and
ctenoid. ^{Head naked.} Below anal behind
eye row of small papillae, also
2 longitudinal rows on cheek.
Predorsal with a delicate
membranous keel.

D. VI, ^{12th} 14, fins closely set,
first dorsal base half that
of second. ^{third to} fourth and fifth
spines elongate, filiform; A.
^{13th} 14; caudal shorter than head,
rounded behind; pectoral rays ^{16th}
17, length ^{length} $5\frac{1}{2}$ in body length;
ventral ^{length} 6, not reaching vent.

Color in spirits pale tan,
with 14 brown, inclined cross
bands on trunk and tail, on
former more inclined than on
latter. Side of head with 3 cross

bands, anterior bent back. ¹⁴⁹¹
Head and front part of body
with many brown dots. First
dorsal yellow. Second dorsal
yellow, with brown cross streaks.
Anal yellow, with broad brown
edge. Brown band on body forward
from vent until opposite last
half of ventral fin. Caudal
with 5 brown cross streaks.
Pectoral yellow, with brown dots
on base. Ventral yellowish on
front half, brownish on hind
half.

Length ³¹⁵ 66 mm ^{Philippines} (Poey ^{Beaufort} 1844)
East Indies, Cryptocentroides
dentatus is said to be close to
Gobius (Cryptocentrus) stigmatophorus
Beaufort, and differ in its smaller
scales, which are both cycloid and
ctenoid. G. (C.) stigmatophorus has
only ctenoid scales. In C. dentatus
the head is shorter, the eyes smaller,

the dorsal spines more elongated.¹⁴⁹²
the cross bands inclined down and
back.

1493

Philippine. The examples
noted ^{below} ~~above~~ differ considerably
from the figure published by
Seale, and republished by Herre.
The latter describes certain
features, however, which appear
unmistakable, as "the preopercles,
opercles, bases of pectorals, and
region back of eyes thickly
sprinkled with small, dark
brown spots, which are likewise
thinly scattered along sides; the
second dorsal has a series of
short black stripes running
downward and forward near
margin, on the membrane between
the rays; bands of body extend
upon fin." The pectoral coloration
is not described and the "ventrals
dusky". My examples all have very
small scattered white spots
on their paired fins.

1494
Amblygobius insignis Seale

Five examples. Cebu, reef opposite.
April 7, 1908. Length 32 to 49 mm.

Bubblygobius insignis Seale

1495

Ten examples. Maatan Island.
Tide pool. August 31, 1909. Length
34 to 72 mm.

1496

Genus Cryptocentrus Valenciennes

Cryptocentrus (Ehrenberg) Valenciennes,
Hist. nat. Poiss., vol. 12, p. ⁽⁸⁴⁾111, 1837.
(Type Gobius cryptocentrus Valenciennes,
tantotypic.)

Paragobius Bleeker, Arch. Néerl. Sci.
Nat. Harlem, vol. 9, p. 322, 1873 (1874).
(Type Gobius knutteli Bleeker.
Néerl. Tijds. Dierk., vol. 4, p. 128,
1874. (Type Gobius knutteli
Bleeker, designated by Komman,
Prelim. Revis. Genera Gobioid
Fisk., p. 97, 1931.)

1497

Body elongate, compressed. Head compressed. Snout long as eye, blunt. Eye advanced, in front half of head. Mouth wide, little inclined, lower jaw little prominent. Teeth in several rows in both jaws, outer enlarged, and outer row of mandible extending only to half of jaw, last tooth mostly a recurved canine. Tongue truncate. Bony interorbital $\frac{1}{4}$ of eye diameter. Nostrils not tubular or in short tube. Gill openings wide. Isthmus narrow. Branchiostegals 5. Inner edge of shoulder girdle without fleshy flaps. Scales 85 to 140 in axial lateral series, ctenoid on hind part of body, cycloid on front part or totally cycloid. Head scaled above after eyes or naked. Cheek scaled or naked. Some

1498

longitudinal mucous canals over preopercle and some obliquely placed under eye and one along mandible to hind edge of preopercle. Some open pores, one on each side lateral of nostrils, some along upper and hind edges of preopercle. Dorsal fins separate, first dorsal with 6 spines, second with 11 to 21 rays. Anal rays 10 to 22. Caudal pointed, longer than head. Pectoral without free silk like rays. Ventrals united, oblong, under pectorals.

Cryptocentrus arabicus (Gmelin)

1499

Gobius arabicus Gmelin, Syst. Nat.
Linn., pt. 1, p. 1198, 1789 (type locality,
Djidda in Arabia) (on Forsk.).
— Lacepède, Hist. Nat. Poiss., vol.
2, pp. 536, 557, 1800 (Asia). —
Schneider, Syst. Ichth. Bloch,
p. 2, 1801 (copied). — Rüppell,
Neue Wirbelth. Fische, p. 139, pl. 32,
fig. 5, 1835 (Oyella). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 74,
1861 (Red Sea). — Klunzinger,
Verhand. Zool.-bot. Gesell. Wien,
vol. 21, p. 477, 1871 (Red Sea). —
Weber, Libanus Exped., vol. 3, ^{Fische} p. 473,
1913 (reference).

1500

Gobius anguillaris (not Linnaeus)
Forskäl, Descript. Animal., pp.
10, 23, 1775 (Djedda) — Walbaum,
Artedi Pisc., vol. 3, pp. 200, 205,
1792 (on Forskäl) — Forster,
Fauna Indica, p. 14, 1795 (reference).

Gobius bimaculatus (Ehrenberg)
Valenciennes, Hist. Nat. Poiss., vol.
12, p. (82) 108, 1837 (type locality,
Red Sea).

Depth 7; head $5\frac{1}{3}$, width $1\frac{5}{6}$. Snout $3\frac{2}{5}$ in head; eye $4\frac{2}{5}$, greater than interorbital; maxillary reaches opposite hind eye edge, expansion $2\frac{3}{4}$ in eye, length $2\frac{1}{5}$ in head; teeth conic, biserial, outer row enlarged; tongue emarginate in front; interorbital $7\frac{1}{2}$, concave. Gill rakers $8+10?$, lanceolate, slender, $2\frac{3}{4}$ in gill filaments, which equal eye.

Scales $85+5$ in lateral series; 19 transversely between second dorsal and anal origins; 31 predorsal. Scales with 13 to 14 basal radiating striae; apical denticles 40 to 60; circuli moderate.

D. VI - I, 12, I, third spine nearly $\bar{=}$ twice body height; A. I, 11; pectoral rays 18.

Faded dull brownish, mostly uniform in alcohol.
Red Sea.

U. S. N. M., no. 83316. No locality.
Wilkes Exploring Expedition (3316).
Length 141 mm. To end of broken
caudal. Agree is largely with
Günther's Gobius arabicus.
He gives head high as broad,
in my example width $1\frac{5}{6}$. He
says canine teeth in the upper
and lower jaws, in my example
the outer teeth greatly larger
than the inner and may be styled
canines.

For comparison the following is
compiled from Rüppell:

1503

Depth 6; head $4\frac{1}{3}$. Snout $3\frac{3}{4}$
in head from snout tip; eye
 $5\frac{1}{4}$, $1\frac{1}{2}$ in snout; maxillary
extends $\frac{1}{3}$ in eye, length $2\frac{1}{3}$
in head from snout tip; level of
mouth begins little below lower
edge, length $2\frac{1}{3}$ in head from
snout tip; canine teeth in front
of each jaw; interorbital low,
eye impinging slightly on upper
profile.

Scales very small (Rüppell's
figure showing about 90 in
lateral series, and 19 transversely
at front of dorsal to anal).
Predorsal scales extend forward
opposite hind preopercle edge.
Head naked.

D. VI—13 or 14, second to
fourth spines end in long free
filaments with second branching
middle of second dorsal base,
first ray $1\frac{3}{4}$ in total head
length; A. 12, first ray 2;

caudal $3\frac{3}{5}$ in rest of fish, ¹⁵⁰⁴
lanceolate; least depth of
caudal peduncle $2\frac{2}{5}$ in total
head length; pectoral $1\frac{1}{8}$,
rays 14; ventral rays I, 5,
fin $1\frac{1}{5}$ in total head length.

Yellowish brown, with
small sky blue dots, mottled
with dark brown spots. Fins
gray brown. First dorsal with
several series of blue dots.
Middle of caudal with blue and
yellow blot, submargin above
and below yellow with fin
edges blackish. Pectoral with
many transverse rows of citron
yellow spots.

Length 114 mm. (Rüppell.)

~~Red Sea~~

1505

Cryptocentrus caeruleopunctatus (Rüppell)

Gobius caeruleopunctatus Rüppell, Atlas
Reise nördl. Afrika, Fische, p. 134, 1828
(type locality, Massawa, Red Sea);
Neue Wirbelth., Fische, p. 140, pl. 32,
fig. 3, 1835 (reference). — Günther, Cat.
Fish. Brit. Mus., vol. 3, p. 70, 1861 (Red Sea).
— Kossman, Zool. Anzeiger, vol. 2, p. 22, 1879
(Red Sea); — Weber, Siboga Exped., vol.
32, Fische, p. 473, 1913 (reference).

Gobius coeruleopunctatus Klunzinger,
Verhandl. Zool.-bot. Gesell. Wien, v. 1, 1,
p. 477, 1871 (Red Sea).

Gobius pavoninus (Ehrenberg) Valenciennes,
Hist. Nat. Poiss., vol. 12, p. 85, 112, 1827
(type locality, Massawa). —

Gobius pavoninus Hilgendorf, Symbol. Physicae,
Hempr. Ehrenberg, p. 9, pl. 9, fig. 4, 1899 (type
locality, Red Sea).

1506

Depth $4\frac{4}{5}$; head $3\frac{3}{5}$. Snout
3 in head; eye $4\frac{1}{2}$, $1\frac{1}{2}$ in snout;
maxillary reaches $\frac{3}{4}$ an eye
diameter behind eye, length
 $1\frac{3}{4}$ in head; no canine teeth;
eyes close set and impinge on
upper profile of head.

Scales very minute (about
90 shown in lateral series on
Reppell's figure, 22 between
second dorsal origin and anal.
Head naked, predorsal scales
extending forward over opercle.

D. VI - I, 11, both fins higher
than body, spines not ending
in filaments, third spine $1\frac{1}{5}$
in head, second ray $1\frac{1}{3}$, ninth
ray 1; A. I, 11, tenth ray 1;
caudal $2\frac{2}{3}$ in rest of fish,
broadly cuneate; least depth
of caudal peduncle $2\frac{1}{3}$; pectoral
 $1\frac{1}{2}$, rays 14; ventral I, 5,
fin $1\frac{1}{6}$ in head.

1507

Generally dark olive green,
On head, gill covers, prepectoral
region and both dorsals royal
blue spots, each bordered
with azure blue. Paired fins
with white dots. Hind part
of body, tail and anal fin,
with azure blue dots. Tail
also with diagonal gray brown
streaks. Caudal with straw
yellow submarginal band all
around next to blackish edge.
Iris yellowish green.

Length 154 mm. (Rüppell.)

Red Sea. Rüppell's figure
is colored largely dull bluish,
showing 6 lighter bands inclined
up and back, mostly on tail,
and 2 more transversely on caudal
peduncle. Hilgendorf's figure
shows 4 inclined pale bands on
the trunk and 6 on the tail. He
also shows 2 dark red bands down
from front of eye, each edged with blue line.

1508

Cryptocentrus cebuanus Herre

Cryptocentrus cebuanus Herre, Gobies of Philippines, p. 240, pl. 19, fig. 2, 1927 (type locality, Cebu); Fishes Herre 1931, Philippine Exped., p. 90, 1934 (Cebu). — Roxas and Martin, Report. Agric. Comm. Manila, Techn. Bull. 6, p. 224, 1937 (reference).

Depth $5\frac{2}{3}$; head $3\frac{2}{5}$, width about $1\frac{3}{4}$. Snout $4\frac{1}{5}$ in head; eye $4\frac{1}{8}$, subocular width $1\frac{1}{2}$; close set; maxillary $1\frac{1}{5}$ in head; eye diameter beyond, length 2 in head; mouth large, oblique, jaws equal; teeth quadriserial, some in upper inner behind symphysis enlarged, and hind lower canines small; interorbital very narrow, eye impinging on upper profile of head.

1509

Scales 85 in lateral series;
32 transversely between second
dorsal and anal; 20 predorsal.
Scales close set, distinct,
extend on predorsal opposite
front of opercle. Head naked,
postocular with lines of minute
papillae.

D. VI - I, 10, third spine $1\frac{1}{10}$
in head, second ray $1\frac{2}{3}$, ninth
ray $1\frac{2}{5}$; A. I, 10, second ray
 $2\frac{1}{4}$, ninth ray $1\frac{1}{3}$; caudal $1\frac{1}{2}$;
least depth of caudal peduncle
 $2\frac{1}{2}$; pectoral $1\frac{2}{5}$, rays 26;
ventral rays I, 5, fin $1\frac{1}{3}$ in head.
Anal papilla short, bluntly
rounded.

In alcohol reddish brown,
with lilac cast anteriorly, becom-
ing yellowish brown on posterior
third. Sides with 10? darker
brown crossbars. Two similar
short bands cross nape, one

just before first dorsal, ¹⁵⁷⁰ other
above opercles. Dark brown
band crosses behind eyes and
divides, one part diagonally down
and forward to hind angle
of maxillary, - other passing ^{back} and
down to opercle. Below large
pale spot, - apparently blue
in life, covering most of preopercle.
Sides of head with large
dark brown circular spots.
dots. Membrane marginally
between first and second spines
of first dorsal with black spot.
Upper margin of caudal tip
broad black line. No other
markings: left on caudal, second
dorsal, anal or pectoral.
Ventral black medially, fading
light brown at outer edges.

Length 89 mm.

Philippines.

(Herre.)

1571

Cryptocentrus cristatus (Macleay)

Gobius cristatus Macleay, Proc.
Linn. Soc. New South Wales, vol. 5,
pt. 4, p. 610, May 20, 1881 (type
locality, Port Jackson, New
South Wales).

Cryptocentrus cristatus McCulloch,
Austral. Mus. Mem., no. 5, pt. 3, p. 376,
Nov. 28, 1929 (reference).

Gobius gobioides Ogilby, Cat. Fish
New South Wales, p. 35, 1886 (type
locality, Port Jackson and Richmond
River, New South Wales) (on Macleay,
G. cristatus Macleay 1881 thought
preoccupied by Finctenogobius
cristatus Day 1873).

Cryptocentrus gobioides Ogilby

Cryptocentrus gobioides Ogilby, Proc.
Roy. Soc. Queensland, vol. 23, p.
1910 (~~type locality~~, Moreton Bay;
Great Sandy Strait). — Mc
Culloch and Whitley, Mem. Queensland
Mus., vol. 8, pt. 2, p. 172, July 7, 1925
(reference).

Gobius xanthotaenia Bleeker,
Nat. Tijds. Ned. Indie, vol. 9, p.
308, 1855 (type locality, Macassar,
Celebes).

1513

Cryptocentrus cryptocentrus (Valenciennes)

Gobius cryptocentrus Valenciennes, Hist.
nat. Poiss., vol. 12, p. ⁽⁹³⁾ 111, 1837, pl. 346,
1837 (type locality, Mascarenes).
— Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 71, 1861 (compiled). —
Klunzinger, Verhand. Zool.-bot. Gesell.
Wien, vol. 21, p. 471, 1-71 (Red Sea).
— Weber, Siboga Exped., vol. 32, Fische,
p. 473, 1913 (reference).

Cryptocentrus melagris (Ehrenberg) Valenciennes,
op. cit. (name in synonymy).

Cryptocentrus fasciatus Hilgendorf, Symbol.
Physicae, H. empr. Ehrenberg, p. 9, pl. 9, fig. 5, 1899
(type locality, Red Sea).

Depth 4; head $3\frac{3}{5}$. Snout $3\frac{3}{4}$ in head; eye $5\frac{1}{3}$, $1\frac{1}{3}$ in snout; maxillary reaches opposite hind eye edge, length $2\frac{2}{5}$ in head; mouth cleft begins nearly eye diameter below level of eye, jaws equal; outer series of teeth stronger than others, and 2 median teeth somewhat longer; eyes close set, impinge on upper profile of head.

Scales small (figure shows 57 in lateral series and 20 transversely below second dorsal origin). Predorsal scales apparently extend forward nearly to eyes, though rest of head naked.

D. $\overline{\text{VI}}$ — $\overline{\text{I}}$, 11, ~~thrust~~^{second} spine $1\frac{1}{2}$ in head, first ray $1\frac{3}{5}$; A. $\overline{\text{I}}$, 9, first ray $2\frac{1}{8}$, caudal $3\frac{1}{2}$ in rest of fish, lanceolate; pectoral $1\frac{1}{5}$ in head (16 rays shown in figure); ventral $\overline{\text{I}}$.

Rose gray, with 10 narrow yellow transverse vertical bands, first beginning below hind part of first dorsal. Back and predorsal with numerous close set blue spots, and others similar to reddish on sides of head. Cheeks with 3 red blue edged vertical streaks. Fins rosy. First dorsal bordered with red, with some scattered dark spots. Second dorsal with median longitudinal row of black spots. Anal with yellow and red lines.

Length 101 mm. (Valenciennes.)

Red Sea. Hilgendorf gives a figure of Cryptocentrus fuscatus which shows a dark red band down from front of eye crossing front of both lips to mandible, only 2 red bars on cheeks, first dorsal higher than body depth, second dorsal

1516
high as body depth, upper half
of caudal with 6 black spots
and anal height greater than
body depth.

1517

Cryptocentrus cyanotaenia (Bleeker)

Gobius cyanotaenia Bleeker, Nat. Tijds.
ned. Indië, vol. 4, p. 475, 1853 (type
locality, Batavia, Java). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 71,
1861 (compiled). — Weber, Siboga Exped.
vol. 32, Fische, p. 473, 1913 (reference).

Gobius (Cryptocentrus) cyanotaenia
Weber, Siboga Exped., vol. 32, Fische, p.
475, 1913 (S. lat. $1^{\circ}42'.5$ E. long. $130^{\circ}47'.5$,
off New Guinea, 32 meters) (error).

Cryptocentrus cyanotaenia Fowler, Mem.
Bishop Mus., vol. 10, p. 413, 1928 (copied).

15-18

Depth $7\frac{1}{4}$; head $4\frac{1}{2}$, width $2\frac{1}{4}$. Upper profile of snout and head obtusely convex; eye 5, in first third of head length, close set; maxillary reaches little behind eye; mouth cleft oblique, lower jaw slightly longer; teeth in jaws pluriserial, outer row conic, curved, little enlarged; postocular groove moderate.

Scales 100 in lateral series; smaller on anterior part of body. Head scaleless.

D. VI - I, 10 or I, 11, spines flexible, fin angulate, lower than body depth, second dorsal close; caudal obtusely rounded, $4\frac{1}{4}$ in body; A. I, 10 or I, 11, like second dorsal, lower and shorter; pectoral rays 19, rays not filamentous; ventral rays I, 5. Anal papilla short, conic.

Body above greenish rose, with 4 broad, transverse pale brown cross bands, below in front silvery, posteriorly pale rose. Also 11 blue transverse stripes. Cheek and opercle with oblique blue streaks, snout with small blue spots. Dorsal and caudal rays yellowish, membrane between spines anteriorly greenish yellow, posteriorly reddish violet. Anal yellow, margin violet with 3 reddish violet longitudinal bands, edged with blue. Pectoral greenish yellow, base spotted with blue. Ventral blackish violet.

Length 115 mm.

East Indies.

(Bleeker.)

Cryptocentrus diproctotaenia Bleeker

Cryptocentrus diproctotaenia Bleeker,
Verslag. Kon. Akad. Wet. Amsterdam,
ser. 2, vol. 9, p. 143, 1876 (type locality,
Amboina).

Gobius diproctotaenia Weber,
Siboga Exped., vol. 32, Fische, p.
473, 1913 (reference).

Depth $5\frac{2}{3}$ to 6; head $3\frac{2}{5}$ to $3\frac{1}{2}$,
width 2. Snout ^{little} or not shorter than eye,
convex; eye 6 in
head, greatly exceeds interorbital;
maxillary reaches behind eye;
mouth cleft begins below level
of eye, ^{oblique,} lower jaw protruding;
lips fleshy; teeth multiserial,
upper outer row enlarged, lower
outer and inner rows enlarged;
tongue entire;

1520

interorbital less than $\frac{1}{2}$ of eye.

Scales 120 in lateral series; 35 transversely between second dorsal and anal; 30 predorsal forward over opercle. Scales of trunk ^{cycloid} crowded, larger on tail.

D. $\overline{\text{VI}}$ - I, 10 or I, 11, fourth and fifth $\overline{\text{spine}}$ longest but not greater than body depth; A. I, 10 or I, 11, like second dorsal; $\overline{\text{caudal}}$ oblong ovate, little longer than head; pectoral rays 16 or 17, obtusely rounded, shorter than head; ventral rays I, 5, obtusely rounded, little longer than pectoral. Anal papilla short, obtuse.

Above brownish or brownish olive, below paler. Iris violet green. Cheek and opercle with oblong spots or narrow short pearly streaks edged with deep violet, as 6 or 7 obliquely forward.

1521

Dorsal and caudal brownish or
purplish, rays golden. Dorsal
rays with 6 short ~~silver~~^{pearly} lines
~~silver~~ longitudinally. Anal
yellow or rosy, with 2 longi-
tudinal brown bands, one
median, other marginal. Pectoral
clear, rays golden. Ventral
yellow medially, brown behind.

Length 149 to 153 mm. (Bleeker.)
East Indies.

1522

Cryptocentrus fontanesii (Bleeker)

Gobius fontanesii Bleeker, Nat. Tijds.
Ned. Indie, vol. 3, p. (741) 764, 1852
(type locality, Celebes); Act. Soc.
Sci. Ind. Neerl., vol. 2, no. 7, p. 6, 1857
(Amboina). — Günther, Cat. Fish. Brit.
Mus., vol. 3, p. 74, 1861 (compiled). — Weber,
Siboga Exped., vol. 32, Fische, p. 473, 1913
(reference).

Gobius (Cryptocentrus) fontanesii Weber,
Siboga Exped., vol. 32, Fische, p. 474, 1913.
(Ladoni, Albi major).

Oxyurichthys fontanesii Fowler and Bean,
Proc. U. S. Nat. Mus., vol. 62, p. 72, 1922
(Cebu).

1523

Cryptocentrus fontanesii Herre, Gobies
of Philippines, p. 242, 1927 (compiled).
— Roxas and Marten, Depart. Agric.
Comm. Manila, Tech. Bull. 6, p. 224,
1937 (reference).

Cryptocentrus fontanesi Yamiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 83, fig. 33,
1936 (Kagoshima).

1524
Depth $6 \frac{1}{3}$; head $3 \frac{3}{5}$.

Snout $4 \frac{1}{3}$ in head from snout tip; eye $4 \frac{4}{5}$, subequal with snout, greatly exceeds interorbital; maxillary reaches $\frac{1}{2}$ in eye, length $2 \frac{2}{5}$ in head from snout tip; interorbital $3 \frac{1}{2}$ in eye. Gill rakers $4 + 10$, lanceolate, $\frac{2}{3}$ of gill filaments, which $2 \frac{4}{5}$ in eye.

Scales 104 in median lateral series from gill opening above to caudal base, and 10 more on latter; 27 transversely between soft dorsal and anal origins; 30 predorsal. Scales with 10 to 12 basal radiating striae; apical denticles 18 to 28; circuli moderate.

D. VI - I, 15, I, third spine 1 in head, penultimate ray $1 \frac{1}{5}$; A. 17, I, penultimate ray

Depth 4; head 5.
Snout $2\frac{4}{5}$ in head; eye 3;

1525
1 1/10; caudal longer than head,
lanceolate; pectoral fins little
shorter than head.

In alcohol dull brownish.
Five transverse, obsolete,
dark cross bands or blotches,
first at occiput, second at
middle of spinous dorsal on
which reflected, third at
front of soft dorsal, fourth
just before caudal peduncle
band fifth at caudal base.
Fins pale brown. Lower anal
edge dusky, with narrow pale
or gray submarginal line.
Innermost pair of ventral
rays dark. Iris pale slate.

East Indies, Philippines,
Japan.

~~U. S. National Museum~~
~~Philippines~~ ~~Alfred R. S. Bather~~
150 mm.

U. S. N. M., no. 84194. Cebu,
Philippines, Dr. Fred Baker.
Length 150 mm.

1527

Cryptocentrus filifer (Valenciennes)

Gobius filifer Valenciennes, Hist. Nat. Poiss., vol. 12, p. ⁽⁸⁰⁾106, 1837 (type locality, "mer des Indes"); — Vaillant, Nouv.

Arch. Mus. Hist. Nat. Paris, ser. 3, vol. 5, p. 58, 1893 (Palawan). — Richardson, Ichth. China and Japan, p. 205, 1846 (China Sea; Macao). — Jouan, Mém. Soc. Sci. Cherbourg, ser. 3, vol. 3, p. 268, 1868 (Hong Kong).

Cryptocentrus filifer Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 24, p. 72, fig. 12, 1901 (Tokyo; Tsuruga; Wakanoura; Kobe; Anomichi; Nagasaki). — Seale, Philippine Journ. Sci., vol. 9, pt. 1, p. 76, 1914 (Hong Kong). — Herre, Gobies of Philippines, p. 241, 1927

(Hong Kong; Amoy). — Fowler, Hong Kong Naturalist, vol. 2, no. 4, p. 310, 2 figs, 1931 (Hong Kong). — Taniyama, Jap. Journ. Zool., vol. 7, no. 5, p. 82, 1936 (Sibata; Toyama Bay; Tokyo; Hiduoka to Ariake Sound; Taihoku and Tainan, Formosa). — Roxas and Martin, Depart. Agric. Comm. Manila, Tech. Bull. 6, p. 224, 1937 (reference). — Fowler, Cat. List Malaya Fish., p. 214, 1938 (Malaya).

Oxyurichthys filifer Jordan and Richardson,
Philippine Journ. Sci., p. 50, 1910
(reference).

Gobius knutteli Bleeker, Act. Soc. Sci.
Ind. Néerl., vol. 3, no. 3, p. 3, 1857-58
(type locality, Kioesio), p. 6 (Japan),
pl. 1, fig. 2. — Günther, Cat. Fish.
Brit. Mus., vol. 3, p. 73, 1861 (China;
Hong Kong). — Bleeker, Ned. Tijds.
Dierk., vol. 2, p. 58, 1865 (Amoy). —
Günther, Rep. Voy. Challenger, vol. 1, pt.
6, p. 55, 1880 (Hong Kong). — Stein-
dachner, Sitzs. Ber. Akad. Wiss. Wien,
vol. 102, p. , 1893 (Swatow).

Chaenogobius knutteli Jordan and Snyder, Annot.
Zool. Japon., vol. 3, p. 112, 1901 (Nagasaki; Yokohama).

Gobius knutteli Duncker, Mitteil.
naturh. Mus. Hamburg, vol. 21, p. 160,
1903 (1904) (Singapore). — Weber, Siboga
Exped., vol. 32, Fische, p. 473, 1913 (reference).

Paragobius knutteli Bleeker, Ned. Tijds.
Dierk., vol. 4, p. 128, 1873 (1874) (Amoy).
macao; Hong Kong

1529

Depth 5 to $5\frac{1}{2}$; head $3\frac{1}{4}$ to $3\frac{1}{3}$, width $1\frac{7}{8}$ to $2\frac{1}{4}$. Snout $4\frac{3}{5}$ to $4\frac{3}{4}$ in head from snout tip; eye $3\frac{3}{5}$ to $4\frac{3}{4}$, greater than snout, $3\frac{2}{3}$ to $3\frac{3}{4}$ times interorbital; maxillary extends $\frac{1}{4}$ to $\frac{1}{3}$ eye diameters behind eye, length $1\frac{9}{10}$ in head; lips fleshy, rather broad; teeth strong, firm, minute, in bands in jaws, above each side 4 to 6 well spaced outer little enlarged and curved, and more of front outer lower closer, slightly enlarged and flare little out; tongue free, rounded in front; interorbital narrow, low, with median longitudinal groove. Gill rakers 5 + 11, short points, $\frac{1}{3}$ of gill filaments, which 2 in eye.

Head, predorsal, chest, breast

1530

and prepectoral region scaleless. On trunk above scales small and well spaced, closer and better developed on tail. Line of fine papillae on lower edge of preorbital; 4 oblique rows from lower eye edge back, cross 2 horizontal lines on cheek, and 2 short oblique rows down from postocular; above opercle horizontal line of pores, preceded by short transverse parietal bar; vertical 2 lines on preopercle and one on front of opercle. Small scales on caudal base.

D. VI - I, 10, I, spines flexible, longest end in filaments, fin length $2\frac{1}{10}$ to $2\frac{4}{5}$ in fish without caudal, fifth ray $1\frac{1}{3}$ to 2 in head; A. I, 9, I, eighth ray $1\frac{1}{4}$ to

1531

$1\frac{2}{5}$; caudal 1, or 3 in rest of fish, ends in median point behind; least depth of caudal peduncle 3 to $3\frac{2}{5}$ in head; pectoral $1\frac{2}{5}$ to $1\frac{1}{2}$; ventral $1\frac{2}{5}$ to $1\frac{1}{2}$.

Pale brown to mauve, whitish below, with 6 darker brown transverse bands, narrower than pale interspaces on tail; also sometimes alternating narrower dark band, as one in each pale interspace. Scattered small blue white spots on opercles and pectoral base. Iris yellowish brown. First dorsal membrane with black subbasal blotch, other membranes each with subterminal white line parallel with spines. Soft dorsal with oblique gray

blue or white diffuse streaks.
Caudal with 5 or 6 diffuse dark
blotches. Anal with whitish
blotches on membranes, terminally
fin gray. Paired fins pale.
Malaya, China, Formosa, Japan.

A. N. S. P., two examples. Hong
Kong, China. Dr. G. A. C. Herblots.
Length 110 to 130 mm.

A. N. S. P., one example. Macao,
China. Dr. G. A. C. Herblots.
Length 98 mm.

U. S. N. M., no. 49860. Tokyo, Japan.
O. S. Jordan and J. O. Snyder.
Nine examples. Length 86 to 113
mm.

U. S. N. M., no. 71340. Shimizu,
Japan. Albatross Collection 1906.
Length 92 mm.

U. S. N. M., no. 71341. Tsuruga,
Japan. Albatross Collection.
Length 133 mm.

Cryptorhynchus *fulvus* *Walker* 1534

[649] Shore above Iloilo, Panay
Island. June 2, 1908. Length 65 mm.

1535

Cryptocentrus gymnocephalus (Bleeker)

Gobius gymnocephalus Bleeker, Nat.
Tijds. Ned. Indië, vol. 4, p. 473, 1864
(Type locality, Batavia, Java).
— Günther, Cat. Fish. Brit. Mus., vol. 3, p. 75, 1861 (compiled).
— Kner, Reise Novara, Fische, p.
1865 (Hong Kong). — Bleeker, Ned.
Tijds. Dierk., vol. 4, p. 128, 1873 (1874)
(reference). — Weber, Siboga Exped.,
vol. 3, Fische, p. 47, 1907 (reference).

Gobius (Cryptocentrus) gymnocephalus
Rendahl, Arkiv för Zool., Stockholm,
vol. 16, no. 2, p. 17, 1924 (reference).

Cryptocentrus gymnocephalus Chu,
Biol. Bull. St. John's Univ., no. 1, p. 160,
Jan. 1931 (reference). — Swatti, Index
Fish. Siam, p. 152, 1937 (Ko Sichang).

Cryptocephal

Depth 8 to $8\frac{3}{4}$; head 6, width 2. Snout obtusely convex, shorter than eye; eye $4\frac{1}{2}$ in head, anterior in head, closely set; mouth cleft ^{partly} oblique, falls below hind part of eye; teeth pluriserial, upper anteriorly each side with 1 or 2 canines; and lower outer each side 1 to 3; postocular groove deep.

Scales very small, more than 100 in lateral series, more or less small and inconspicuous anteriorly and posteriorly.

D. VII - I, 19 or I, 20, spines flexible, scarcely higher than body depth, close to second dorsal; A. I, 19 or I, 20, like second dorsal though lower; caudal lanceolate, $3\frac{2}{3}$ to $4\frac{1}{4}$ in body; pectoral ray not silky.

rays 20; ventral rays I, 5, 1537
acutely rounded.

Body pinkish green, with
3 broad transverse diffuse
rose bands, first from dorsal
to ventral, second and third
from ^{second} dorsal to anal, dorsal
fins pale greenish, first
dorsal red above, second dorsal
yellow above, edged with blue
and red. Anal with median
red and blue longitudinal
band. Caudal green, with
many oblique alternating
red and blue bands, edged
yellow above. Pectoral pale
rose. Ventral pale rose
violaceous.

Length 117 to 140 mm. (Bleeker.)
East Indies, Siam, China.

1538

Cryptocentrus leonis H. M. Smith

Cryptocentrus leonis H. M. Smith, Proc.
Ac. Nat. Mus., vol. 79, art. 7, p. 46, ^{fig. 21,} 1931
(type locality, Chantabun River, Lem
Sing). — Suwatti, Index Fish. Siam,
p. 152, 1937 (reference).

Depth 6; head $3\frac{1}{3}$, width $1\frac{1}{2}$.
Snout 5 in head from snout
tip; eye $4\frac{1}{2}$ in head, subequal
with snout; maxillary extends
little behind eye or $\frac{1}{3}$ an
eye diameter, length $2\frac{1}{8}$ in
head; teeth in bands in jaws,
outer row little enlarged, not
canines; interorbital very
narrow, eyes close together and
largely impinge on upper profile.
Scales 125 in lateral series;
30 transversely between second

dorsal origin and anal.
 Predorsal scaly half way to
 eyes, with 35 scales. Head
 otherwise, and pectoral base
 naked. Breast covered with
 small embedded scales.
 Scales on body cycloid, minute,
 but slightly larger posteriorly.
 D. VI - I, 10, fourth spine $1\frac{1}{3}$
 in total head length,
 second ray $1\frac{7}{8}$, penultimate
 ray $1\frac{1}{2}$; A. I, 9, second ray
 $2\frac{1}{8}$, penultimate ray $1\frac{1}{6}$;
 caudal 1, lanceolate; least
 depth of caudal peduncle 3;
 pectoral $1\frac{1}{4}$, rays 14; ventral
 rays I, 5, fin $1\frac{1}{6}$ in head.

Reddish brown, head paler.
 Cheek and opercle with 8
 narrow oblique, parallel, well
 spaced dark brown stripes,
 extending up and back,
 and each stripe edged lighter.

1540

Several dark spots on top of head. Fins light brownish. Anal with lower edge brown and 3 dark brown bands. Ventral finely barred with dark brown.

Southeast Siam.

U. S. N. M., no. 90322. Estuary of the Chantabun River at Lam Sing (Lion Point), Southeastern Siam. July 17, 1928. Length 135 mm. Type.

1541

Cryptocentrus leptcephalus Bleeker

Cryptocentrus leptcephalus Bleeker,
Verslag. Kon. Akad. Wet. Amsterdam,
ser. 12, vol. 9, p. 146, 1876 (type locality,
Singapore) — Fowler, ^{Phil.} ~~Cat.~~ Malay.
Fish ^{Malaya}, p. 214, 1938 (reference).

Gobius leptcephalus Weber, Siboga
Exped., vol. 57, Fische, p. 473, 1913
(reference).

Depth 6; head 4, width 3.

Snout obtusely convex, shorter than eye; eye 4 in head, greatly exceeds interorbital; maxillary reaches below posterior part of eye; mouth cleft begins below level of lower eye edge, oblique, lower jaw protruding; lips moderately fleshy; upper teeth with outer enlarged series of which 2 or 3 anterior enlarged canines; lower teeth with outer enlarged series and lateral posterior recurved canine each side, inner series but slightly larger; tongue entire; interorbital 4 in eye.

Scales 105 in lateral series; 25 transversely below second dorsal, head and predorsal scaleless. Scales on body cycloid, small on trunk, larger on tail.

Cheek with longitudinal line. 1543
obscure.

D. VI - I, 11 or I, 12, fins sub-
continuous, third and fourth
spines much greater in length
than body depth, dorsal rays
more or more or less double
longer; A. I, 10 or I, 11, like soft
dorsal, shorter; caudal ovate
lanceolate, little longer than
head; pectoral little shorter than
head, rounded, rays 17; ventral
rays I, 5, like pectoral. Anal
papilla oblong, obtuse.

Body above rose green, below
pearly rose. Iris violet. Head
and sides with numerous, crowded
ocelleform ^{rosy} dots, or deeply ringed
with pearly. On side 7 or 8
transverse ~~broad~~ oblique ^{light} brown
bands, broader posteriorly.
Fins pale rose or yellowish.
~~Dorsal spines~~ Spinous dorsal with

1544
with numerous carmine ocelli,
ringed violet, in longitudinal
series. Second dorsal edged
above broadly with black.
Ventral and Anal violet or
purple.

Length 83 mm.

(Bleeker.)

Malaya.

1545

Cryptocentrus leucostictus (Günther)

Gobius leucostictus Günther, Proc. Zool.
Soc. London, p. 664, pl. 63, fig. C, 1871
(type locality, Tanga Islands); Journ.
Mus. Godeffroy, vol. 6, pt. 11, p.
176, pl. 108, fig. 7, 1877 (type). —
Weber, Siboga Exped., vol. 57, Fische, p.
473, 1913 (reference).

Cryptocentrus leucostictus Fowler,
Mem. Bishop Mus., vol. 10, p. 413, 1928
(copied); vol. 11, no. 6, p. 444, 1934 (Tonga).
— Herre, Fishes Herre 1931 Philippine
Exped., p. 91, 1934 (Dumaguete; Aivalan,
Fiji). — Roxas and Martin, Depart.
Agric. Comm. Manila, Techn. Bull. 6,
p. 224, 1937 (reference).

1546

Depth 6 (figure shows 5);
head 4 (figure shows $3\frac{3}{4}$).
Snout 5 in head from snout
tip; eye 5 (figure shows $5\frac{4}{5}$),
 $1\frac{1}{5}$ in snout; maxillary
reaches $\frac{3}{5}$ in eye, length 3
in head from snout tip;
mouth cleft begins well below
level of eye, lower jaw
protruded; eyes close set,
close to but not impinging on
upper profile of head.

Scales especially small.
Head and front part of back
scaleless.

D. VI - 12, second dorsal
spine $\frac{2}{8}$ in total head
length, second ray $2\frac{1}{5}$; A.
11, second ray $2\frac{1}{3}$; caudal
1, lanceolate; least depth of
caudal peduncle $2\frac{1}{5}$; pectoral
 $1\frac{3}{7}$; ventral $1\frac{1}{2}$; dorsal
and anal lower than body depth.

1547

Grayish, with irregular
dark cross bars on back.
Side and lower surfaces with
numerous round spots and dots.
Dorsal rays with black spots,
forming inclined rows. Anal
with 1 oblique black band
(4 shown on figure). Caudal
with many cross bands (6 dark
ones shown on figure). Ventrals
speckled with black and white.
Length 68 mm. (Günther.)

Philippines, Polynesia.

Cryptocentrus liolepis Bleeker

Cryptocentrus liolepis Bleeker,
Verlag. Kon. Akad. Wet. Amsterdam,
ser. 2, vol. 9, p. 145, 1876 (type locality,
Borneo).

Gobius liolepis Weber, Siboga
Exped., vol. 57, Fische, p. 473, 1913
(reference).

Depth $6\frac{2}{5}$; head $4\frac{1}{4}$, width 2.
Snout obtuse convex, shorter than
eye; eye 5 in head, greatly exceeds
interorbital; maxillary reaches $\frac{1}{2}$
in eye; mouth begins level with
lower part of eye, lower jaw
protruding; lips fleshy; teeth

1549

pluriserial, upper outer enlarged
and anterior ones caninoid,
lower with outer lateral recurved
canine; tongue entire; interorbital
 $\frac{1}{3}$ of eye.

Scales 105 in lateral series;
28 transversely below second
dorsal. Head above from behind
occiput and posttemporal scaly.
Scales of head and trunk all
cycloid, on latter crowded, much
larger on tail. Cheek with 2
longitudinal and 3 or 4 obliquely
transverse lines of conspicuous pores.
Anal papilla oblong, conic.

D. VII, I, 11 or I, 12, fins sub-
continuous, spines lower than
body depth, rays more or less
twice length of spines, lower
than body depth; A. I, 10 or I, 11,
like second dorsal, shorter;
caudal lanceolate, nearly twice
long as head; pectoral shorter

1550

than head, obtusely rounded,
rays 18; ventral like pectoral,
rays I, 5. ~~(Bleeker.)~~

~~Length 85 mm.~~

Body and fins violet brown.
Head and trunk with golden
ocellated dots, ^{variable,} ~~or~~ numerous and
crowded ^{on} rosy on head.

Length [^] 85 mm. (Bleeker.)

Borneo. Related to Cryptocentrus
paronioides in fin formulas,
but with longer body and
different spots.

Cryptocentrus mandae Fowler

1551

Cryptocentrus mandae Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 89,
p. 254, fig. 283, 1937 (type locality,
Bangkok, Siam).

Depth $6\frac{3}{4}$; head 4, width $1\frac{3}{4}$.
Snout 5 in head from snout tip;
eye $5\frac{7}{8}$, $1\frac{1}{6}$ in snout, - greater than
interorbital; maxillary reaches
opposite $\frac{2}{3}$ in eye, length 3 in head
from snout tip; lips broad, fleshy,
smooth, entire; bands of finely
villiform teeth in jaws, with pair
of wide set canines anteriorly in
each, besides middle of each
mandibular ramus with well hooked
canine pointing posteriorly; interorbital
 $\frac{1}{2}$ of eye, level and little below level
of upper edges of eyes. Gill opening
extends forward opposite hind edge

Glossogobius giurus (not Buchanan -
Hamilton) Rutter, Proc. Acad. Nat. Sci.
Philadelphia, p. 84, 1897 (Swatow).

Closely related to Glossogobius
giurus (Buchanan - Hamilton), and
differs chiefly in the presence of
scattered black specks on the
top of the head and upper parts
of the body.
China, Japan.

of preopercle. Gill rakers $6 + 12$, (1553)
lanceolate, $\frac{2}{3}$ of gill filaments or
 $\frac{1}{2}$ of eye. Inside gill opening below
on shoulder girdle rather broad
deep notch.

Scales $90 + 4$ median lateral
series; 33 transversely above anal origin;
~~20~~ predorsal, ^{naked.} ~~forward to head~~. Rather
low and slightly elevated convexity,
with swollen appearance, on predorsal
immediately before dorsal fin. Head
naked, with ladder like arrangement
of minute papillae on cheek; row back
over postocular, line along lower face
of each mandibular ramus and preopercle,
several bars on opercle; transverse
intersection over top of head behind eyes
with parietal extension back each
side of occiput; very inconspicuous
vertical bars of minute bead-like
papillae, well spaced, along sides of
body. Chest, breast, and prepectoral
regions naked. Scales with 14 to 20
radiating striae, largely basal; circuli
fine, basal, obsolete apically.

D. VI, 11, I, fifth spine $1\frac{3}{4}$ in total

head, soft fin height $1\frac{2}{5}$; Re. I, 10, I,¹⁵⁵⁴
fin height $2\frac{1}{8}$; caudal 3 in
rest of fish, broadly expanded,
ovoid; least depth of caudal
peduncle $2\frac{3}{4}$ in ^{total} head; pectoral
 $1\frac{1}{4}$, rays 15; ventral rays I, 5,
with broad, entire connecting
membrane in front, fin $1\frac{1}{5}$ in
total head length. Anal papilla
rather large, fleshy, truncate,
little extruded.

Largely brownish, with very
numerous, little contrasted, close
set, small paler spots, crowded to
form obscure reticulated appearance
over anterior half of body. Thirteen
dark to blackish transverse bands,
most distinct on tail, and several
more or less paired. Iris gray.
Jaws with obscurely defined darker
blotches. Fins pale to light gray.
Spinous dorsal with gray black
blotches on spines, and smaller variable
spots on membranes. Each dorsal ray
with 6 variable blackish brown blotches.
Anal with contrasted black sigmoid
bands. Caudal with about 10 transverse

series of dark to blackish blotches. 1555
Pectoral with 6 dark transverse variable
bars. Ventral dark gray, with whitish
spots.

A. N. S. P., No. , Bangkok,
Siam. Length 148 mm. Type.

Only known from the above
example, which appears unique
in its coloration, dorsal and anal
not reaching caudal and its small
haired fins.

from lower eye edge down over
cheek and 2 back over post-
ocular from hind eye edge.
Lips reflect 3 dark blotches
from anterior bars from eye.
Iris dark gray. Spinous
dorsal transparent brownish,
with darker cloudings on spines.
Soft dorsal with each ray
spotted darker. Caudal with 5
or 6 dark transverse bars. Anal
pale. Pectoral pale, dark basal
spot close below origin. Ventral
uniformly pale.

South Africa. Differs from
Glossogobius giurus chiefly in its slender body

Cryptocentrus niveatus (Valenciennes)

Gobius niveatus Valenciennes, Hist. nat. Poiss., vol. 12, p. 81, 1837 (type locality, Java). — Bleeker¹⁰⁷, Verh. Batavia. Genoot. (Blenn. Gob.), vol. 25, p. 7, 1849 (name only). — Günther, Cat. Fish. Brit. Mus., vol. 3, p. 71, 1861 (copied). — Weber, Siboga Exped., vol. 57, Fische, p. 473, 1913 (reference).

Gobius (Cryptocentrus) niveatus Weber, op. cit., p. 474. (nusa laut).

1557

Depth 10 in total; head 6, half high as long. Snout obtuse, rounded. Cheek with longitudinal lines.

D. VI - I, 11, second dorsal higher than first, both higher than body depth; A. I, 10; caudal 4 in total.

Grayish brown. Sides of head and lower surfaces dotted with white. Fins with brown spots on rays.

Length 89 mm.

(Valenciennes.)

East Indies.

1558

Cryptocentrus octofasciatus Regan

Cryptocentrus octofasciatus Regan,
Trans. Linn. Soc. London, ser. 2, Vol. 12,
p. 241, pl. 29, fig. 2, 1908 (type locality,
Chagos Archipelago, Diego Garcia).

→ Tomiyama, Jap. Journ. Zool., vol. 7,
No. 1, p. 80, fig. 30, 1936 (Hirosima) (error).
Cryptocentrus octofasciatus

Depth $4 \frac{1}{2}$ (figure shows $4 \frac{1}{5}$);
head $3 \frac{2}{3}$ (figure shows $3 \frac{1}{2}$);
width $1 \frac{1}{2}$. Snout 4 in head;
eye $4 \frac{1}{2}$ (4 on figure), subequal
with snout; maxillaries extend
below hind eye edge, length
 $2 \frac{1}{2}$ in head; mouth begins
nearly eye diameter below level
of eye, jaws equal anteriorly;
teeth in lower, outer series
enlarged and pair of upper
canines; interorbital space
narrow, eye impinging on upper

1559

profile of head; subopercle
produced forward into a
spine.

Scales 75 in lateral series.
Scales small and cycloid on
body. Head naked.

D. VI, I, 10, third spine $1\frac{1}{4}$
in head, first branched ray
 $1\frac{2}{3}$, eighth branched ray $1\frac{1}{4}$,
spines projecting little beyond
membrane; A. I, 9, first
branched ray 2, seventh branched
ray $1\frac{1}{6}$; caudal 1, rounded;
least depth of caudal
peduncle $2\frac{1}{5}$; pectoral $1\frac{1}{4}$,
rays 20; ventral rays I, 5,
fin length 1.

Body with 8 dark vertical
bars separated by 7 pale
stripes and with scattered
pale blue spots. Blue spots
on head and anterior parts
of body arranged round some

1560

small rounded blackish spots.
Similar blackish spots in two
irregular series on dorsal fins.

Length 75 mm. (Regan.)

Chagos Archipelago and
Japan. Tomiyama's figure
of a smaller example differs
considerably in color pattern,
especially in the presence of
4 dark vertical bands trans-
versely on the anal fin,
and the spots on the dorsals
are quite different.

1561

Cryptocentrus oni Tomiyama

Cryptocentrus oni Tomiyama, Jap.
Journ. Zool., vol. 7, No. 1, p. 82, fig. 32,
1936 (type locality, Province Idzu,
Sidnoka-ken).

Depth 8; head $3\frac{1}{2}$, ^{width $1\frac{3}{4}$.} Snout
5 (figure shows 7) in head
from snout tip; eye $7\frac{1}{2}$ (fig-
ure shows 4), greatly exceeds
snout or narrow interorbital;
maxillary extends beyond eye
 $\frac{1}{3}$ eye diameter, length $2\frac{1}{3}$
in head from snout tip; mouth
cleft begins well below level
of eye, but little inclined,
lower jaw slightly longer;
teeth in several rows; tongue
acutely rounded; eye well
impinging on upper profile of
head, interorbital width
4 in eye.

1562

Scales 100 in lateral series;
25 transversely; 12 predorsal.
(shown forward over opercle).
Head naked, and scaly on
breast and pectoral base.

D. VI, I, 11, second spine
 $1\frac{1}{3}$ in total head length,
first branched ray $2\frac{1}{2}$;
penultimate ray $1\frac{9}{10}$; A. I, 11,
first branched ray $4\frac{1}{2}$,
penultimate ray $2\frac{1}{6}$; caudal
 $1\frac{1}{6}$, rounded behind; least
depth of caudal peduncle $3\frac{3}{4}$;
pectoral $1\frac{1}{3}$, rays 18; ventral
rays I, 5, fin length $1\frac{2}{7}$. Anal
papilla $2\frac{4}{5}$ in eye, pointed.

In formaline dark purplish,
pale on belly, with large
dark blotches on side of body.
Black band on lower part
of opercle extending forward
to tip of chin. Dorsals with
dark round spots. Caudal

and anal dusky. Pectoral ¹⁵⁶³
pale, with 2 large dark
blotches. Ventral blackish.
Length 120 mm. (Tomiyaama.)
Japan.

Cryptocentrus papuanus (Peters)

Gobius papuanus Peters, ^{Monats} ~~Sitzb.~~ Ber.
Akad. Wiss. Berlin, p. 839, 1876 (1877)
(type locality, Mac Cluer Bay, New
Guinea). — Weber, Siboga Exped., vol.
57, Fische, p. 473, 1913 (reference).
Gobius (Cryptocentrus) papuanus Weber, op. cit., p. 474
(Galayer).

Cryptocentrus papuensis Bleeker,
Arch. Néerl. Sci. Nat. Harlem, vol. 13, p.
54, 1874 (~~New Guinea~~) new name,
based on Peters ~~II~~, not Valenciennes who
wrote "Gobius Papuensis"!).

Amblygobius papuanus Fowler, Mem.
Bishop Mus., vol. 10, p. 413, 1928 (copied).

Depth $6\frac{1}{2}$ in total; head 4.
 Snout convex, blunt, little shorter than eye; eye 4 in head, close set; mouth cleft slightly oblique, extends behind eye; jaws equally wide, prominent; teeth in narrow bands, at front and anteriorly each side of mandible 1 or 2 strong canines; opercle rounded, without spine.

Scales very small, somewhat larger on tail. Head scaled.

D. VI - I, 10, rays shorter than body depth; A. I, 9; second dorsal and anal nearly opposite; caudal pointed; ventral shorter than head.

Yellowish green speckled with brown. Brown band from eye to hind end of upper jaw. On back, small, round, clear, dark edged spots. On body 4 transverse cross-bands;

first from neck posteriorly
extends with brown tint
over part of gill covers; second
from dorsal spines; third
and fourth from soft dorsal.
Spinous dorsal medianly,
before tip and hind rays black.
Second dorsal white at base
and margin, medially black.
Anal broadly edged black.
Middle of caudal base with
round spot and posterior half
of fin blackish. Ventral with
small round spot near front
part basally.

Length 50 mm.

New Guinea.

(Peters.)

1567

Cryptocentrus pavoninoides (Bleeker)

- Gobius pavoninoides Bleeker, Verh.
Batavia. Genoot. (Blenn. Gob.), vol. 22,
p. 33, 1849 (type locality, Sumanap,
East Madura); vol. 22 (Madura), p. 5,
1849 (Sumanap); Nat. Tijds. Ned.
Indie, vol. 20, pp. 238, ^{450,} 1859-60 (Singapore).
— Fowler, ~~Cat.~~ ^{Part} Fish. Malaya, p. 218,
1938 (reference).
— Weber, Siboga Exped., vol. 57, ^{Fische,} p. 473,
1913 (reference).

Depth 6 to 7, body elongate, ¹⁵⁶⁸
compressed; head 4, width 2.
Eye 4 in head, at first third
in head, closely situated;
teeth villiform, pluriserial,
above with several larger outer
teeth, not canines; mouth cleft
extends below hind ^{part of} eye.
Scales 80 to 90 in lateral
series.

D. VI - I, 13, higher than body;
A. I, 11, second dorsal and anal
angulate; caudal obtusely rounded
 $4\frac{3}{4}$ in body length; pectoral 7,
rays 19; ventral rays I, 5,
length 5 in body. Anal papilla
conic, obtuse.

Head brownish, with blue
spots. Body with 10 or 11 deep
brown transverse bands. Fins,
except ventral, brownish. First
dorsal black spotted, second
dorsal with clear ocelli.

Ventral basally and laterally¹⁵⁶⁹
brown, medially and terminally
black).

Length 140 mm. (Bleeker.)
East Indies, Malaya.

1570

Cryptocentrus polyophthalmus (Bleeker)

Gobius polyophthalmus Bleeker, Nat.
 Tijds. ned. Indië, vol. 4, p. 474, 1853
(type locality, Batavia, in sea).
 Günther, Cat. Fish. Brit. Mus.,
 vol. 3, p. 73, 1861 (copied).

Cryptocentrus polyophthalmus Fowler,
 ^{Lat.} Cat. Fish. Malaya, p. 214, 1938 (Malaya).

1571

Gobius voigtii Bleeker, Nat. Tijds. Ned.
Indie, vol. 6, p. 517, 1854 (type locality,
Delakan, West Sumatra)^(no description); vol. 7,
p. 83, 1854 (Ulaikan); vol. 9, p. 259, 1855
(Sibogha); vol. 12, p. 215, 1856 (Lias);
vol. 18, p. 356, 1859 (Bawean); Act.
Soc. Sci. Ind. Neerl., vol. 3, no. 9, p. 6,
1857-58 (Sibogha); (Acht. Sumatra)
vol. 8, p. 42, Feb. - Aug. 1859 (reference). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 72, 1861 (copied). —
Australian materials. — Weber, Siboga Exped., vol. 57, Fische, p. 47,
1913 (reference).

~~Günther~~ Ann. Mag. Nat. Hist. London,
ser. 3, vol. 20, p. 1867 (Cape York).
— McCulloch and Whitley, Mem.
Queensland Mus., vol. 8, pt. 2, p. 171,
July 7, 1925 (reference).

— McCulloch, Austral. Mus. Mem.,
no. 5, pt. 3, p. 371, Nov. 28, 1929 (reference).

Gobius voighti Bleeker, Nat. Tijds. ned.
Indie, vol. 20, pp. 238, 450, 1859-60
 (Singapore).

Cryptocentrus voighti Herre, Fishes
Herre 1931 Philippine Exped., p. 91, 1934
 (Unisan). — Roxas and Marten, Dep.
Agric. Comm. Manila, Tech. Bull. 6,
 p. 224, 1937 (reference).

Gobius xanthotaenia Bleeker, Nat. Tijds.
ned. Indie, vol. 9, p. 283, 1855 (type locality,
Macassar, Celebes).
 308,

$1\frac{1}{5}$ to $1\frac{1}{4}$, rays 17, not silky;
ventral $1\frac{2}{7}$ to $1\frac{1}{3}$.

Light brown above, with
variable darker scattered spots
and mottling. Along middle of
side 5 groups of dark blotches,
each formed of 2 or 3 dark
spots, also smaller neutral
black one at median caudal
base. Sides of head with some
dark blotches. Dark bar from
front eye edge, another forward

depth $7\frac{3}{4}$; head 5, width 2.

Snout obtusely convex, shorter than eye; eye 4 in head, closely set, in first third of head; mouth cleft extends below hind part of eye, oblique; teeth pluriserial, outer row enlarged, mandible with 2 curved canines; postocular groove obsolete.

Scales 85 in lateral series; anteriorly on body much smaller and less conspicuous.

D. VI - I, 10 or I, 11, fins close set, higher than body, spines flexible; A. I, 10 or I, 11, lower than dorsal; caudal lanceolate, $3\frac{1}{2}$ in body length; pectoral rays 17; ventral rays I, 5, subequal with pectoral or 6 in body length. Anal papilla conic.

1574

Body above pale green, below
pale rose. Body with 8
transverse yellow bands; first
to third bands from back to
belly; fourth to sixth from
second dorsal to anal; seventh
and eight on caudal. Laterally
behind middle 3 diffuse
rounded violaceous spots.
Cheek and sides of head with
numerous carmine ocelli, ringed
with blue. Vertical fins pale
blue. First dorsal with rounded
and oblong carmine spots, bordered
with blue, ^{fin} edge above yellow.
Second dorsal membrane with
carmine spots, bordered with
blue, in 5 or 6 longitudinal
series, edge of fin above tricolor
as yellow, blue and carmine.
Caudal with longitudinal oblique
carmine and blue bands,
marginated above like second

. 1575

dorsal, below bicolored with
violet and yellow, at middle
between single rays violet
spot. Pectoral golden.
Ventral violaceous.

Length 95 mm. (Bleeker.)
East Indies, Malaya.

1576

Cryptocentrus pretiosus (Rendahl)

Gobius (Cryptocentrus) pretiosus
Rendahl, Arkiv för Zool., Stockholm,
vol. 16, no. 2, p. 16, 1924 (type locality,
Hong Kong).

Cryptocentrus pretiosus Chu, Biol. Bull.
St. John's Univ., no. 1, p. 160, Jan. 1931
(reference).

1577

Depth $5\frac{1}{2}$; head $3\frac{2}{3}$ to $3\frac{9}{10}$, width $1\frac{1}{2}$. Snout ~~$\frac{1}{2}$ times~~ longer than eye; $3\frac{1}{3}$ to $3\frac{4}{5}$ in head; eye $5\frac{2}{3}$, elevated, close set; maxillary reaches below hind eye edge, length 2 to $2\frac{1}{5}$ in head; mouth large, oblique, lower jaw shorter than upper; teeth in broad bands, outer and inner row in both jaws enlarged and curved; inter-orbital 3 in eye. Gill rakers $6 + 12$, elongated, slender.

Body with small cycloid scales. Head naked.

D. VI, 12, fourth spine nearly equals head; A. 11, tenth ray $\frac{1}{4}$ times head length, also same ray of second dorsal similar; caudal long, oval, 3 times in body length; pectoral rays 17 or 18.

In alcohol uniform brown.

paler on under side of head.
Head, gill membrane, basal
part of pectoral and body
with silvery marked with
pearly spots. Dorsal fins on
upper half of middle with 3
or 4 large elongate ove blotches,
between first and second,
second and third and third and
fourth rays (in one example
between fourth and fifth rays).
Ventrals deep brownish black.
Length 121 to 125 mm. without
caudal. (Rendahl.)

China. Said to be related
to Gobius filifer, said to have
pearly spots on head and pectoral
base, brown body with 5 dark
cross bands, first dorsal with
only one ^{blackspot} near base between first
and second fins and ventrals
not blackish brown.

1579

Cryptocentrus rubropunctatus

Seymour Sewell

1580

Cryptocentrus russus (Cantor)

Gobius russus Cantor, Journ. Asiatic Soc. Bengal (Cat. Malay. Fish.), vol. 18, pt. 2, p. 1168, 1849 (1850) (type locality, Pinang). — Günther, Cat. Fish. Brit. Mus., vol. 3, p. 72, 1861 (type). — Károli, Termesz. Füzetek, Budapest, vol. 5, p. 165, (1881 (1882) (Nagasaki). — Weber, Siboga Exped., vol. 57, Fische, p. 473, 1913 (reference).

Cryptocentrus russus Fowler, Cat. Fish. (Malaya Fish.), p. 214, 1938 (reference).

Depth 7 in total; head $4\frac{1}{2}$, width little less than body depth. Snout broad, rounded; eye 4, subequal with snout; mouth cleft wide, oblique, angle below middle of orbit, lower jaw little longer than upper; teeth velvety, 4 anterior each side above distant, longer than rest; outer lower with 5 on each side enlarged, last slightly recurved; cheeks tumid.

Scales exceedingly small, ciliated, striated, indistinct, almost hidden in skin.

Head and predorsal naked.

D. VI - I, 10, spines ending in short filaments, first longest high as body depth, ninth ray long as first spine; A. I, 10, like second dorsal; caudal somewhat pointed; pectoral rays 18; ventral rays I, 5.

Flesh or pale salmon colored, back blackish. Side with 4 or 5 large clouded blackish spots; each scale with minute vertical lanceolate whitish spot in center. Iris pale golden, spotted with black. First dorsal whitish at base and at upper edge, with 2 transversely waved blackish bands, separated by white, which surrounds large black spot between fourth and fifth rays. Second dorsal whitish, minutely dotted with brown, and with 2 irregular transverse series of pale blackish, clouded spots. Dorsal and anal rays flesh color. Membranes of caudal, anal and paired fins whitish, minutely dotted with brown.

Length 111 mm. (Cantor, Günther.)
Malaya, Japan.

Cryptocentrus vagus Herre

Cryptocentrus vagus Herre, Gobies of Philippines, p. 243, pl. 19, fig. 3, 1927 (type locality, Mindoro or Mindanao; Iloilo). — Roxas and Martin, Depart. Agric. Comm. Manila, Tech. Bull. 6, p. 224, 1937 (reference).

Depth 5; head $3\frac{1}{8}$, thicker than body. Snout $5\frac{3}{5}$ in head (figure shows 5 from snout tip); eye $4\frac{2}{3}$ (figure shows 4 from snout tip), ~~greater than~~ ~~exceeds~~ snout, and greatly exceeds interorbital; maxillary extends beyond eye half an eye diameter. Length $1\frac{3}{4}$ in head from snout tip; mouth begins on level with lower eye edge, lower jaw protruded; teeth

1584

triserial above, lower biserial with 2 pairs of canines back on either side from symphysis and outside rows of teeth; interorbital width 3 in eye; last not entering upper profile of head.

Scales 75 in lateral series; 30 transversely. Body covered with rather easily displaced scales posteriorly, smaller and closely adherent anteriorly, disappear above pectoral base. Predorsal and head scaleless, without papillae.

D. VII - I, 10, second and third spines exceedingly elongate with fine silk-like tip, second spine 2 in fish without caudal reach $7/8$ to caudal base, eighth ray long as head; A. I, 10, seventh ray $1 1/5$ in head; caudal 2 in rest of fish, lanceolate; least

1585

depth of caudal peduncle $2 \frac{3}{4}$
in total head length; pectoral
 $1 \frac{1}{5}$, rays 15; ventral rays
5, fin $1 \frac{1}{3}$ in total head
length.

In alcohol uniform yellowish,
with large dark brown blotch
on upper part of opercle.
Pupil of eye white. Membrane
between first to third dorsal
spines deep black, between fifth
and sixth large black spot
on basal part of membrane,
rest of fin minutely specked
with dusky and basal half
of each spine black. Second
dorsal and anal with blackish
margin, membranes gray with
minute dusky specks. Caudal
brownish, dusky toward tip.
Pectoral colorless. Ventral blackish.
Length 35 to 44 mm. (Herre.)
Philippines.

Cryptocentrus venustus Seale

Cryptocentrus venustus Seale, Philippine
Journ. Sci., vol. 9, pt. 1, p. 76, pl. 2, fig. 2,
1914 (type locality, Hong Kong). —
Herre, Gobies of Philippines, p. 244,
1927 (Hong Kong). — Reeves, Journ.
Pan-Pac. Res. Inst., vol. 2, no. 3, p. 13,
July-Sep. 1931 (reference). — Chen,
Biol. Bull. St. John's Univ., no. 1, p.
160, Jan. 1931 (reference).

Depth $4\frac{3}{4}$; head $3\frac{1}{3}$, width $1\frac{3}{4}$.
Snout $4\frac{1}{3}$ in head; eye $4\frac{1}{2}$, $1\frac{1}{10}$
in snout, 3 times interorbital;
maxillary reaches opposite hind
eye edge, length $2\frac{1}{10}$ in head;
teeth villiform, in bands in
jaws, outer front ones little
enlarged; tongue thick, fleshy,
convex in front; interorbital
narrow, low, concave medially.
Gill rakers $7+14$, low, short,
clavate, $\frac{1}{2}$ of gill filaments,
which $1\frac{4}{5}$ in eye.

Scales $65+10$ in median
lateral series; 28 transversely
between second dorsal and anal
origins; about 16 predorsal
where somewhat obsolete. Head
largely naked. Eight short lines
of pores radiate from lower and
hind eye edge, anterior down
over cheek, cross several

indistinct horizontal lines; line along preopercle edge forward on mandible; horizontal line above opercle and L like line on opercle. Scales less distinct on chest, breast and prepectoral.

D. VI — I, 11, I, spines flexible, fourth spine $1\frac{1}{6}$ in head, tenth ray 2; A. I, 10, I, ninth ray $1\frac{4}{5}$; ~~caudal and pectoral~~ ^{caudal and pectoral} ~~caudal peduncle~~ (damaged); least depth of caudal peduncle $2\frac{1}{3}$; ventral $1\frac{1}{4}$.

Dark gray brown, paler or more livid gray below. Scattered blue spots on head and pectoral base. Spinous dorsal dark gray brown, first two membranes blackish. Second dorsal dark gray, each membrane with several pale spots. Caudal and anal dark gray. Ventral blackish gray. Branchiostegal region

dark gray. Iris gray.
China.

1589

A. N. S. P., one example. Hong Kong,
China. ^{Dr. G. A. C. Herbolots} Length 78 mm.

A. N. S. P., one example. Macao.
Dr. G. A. C. Herbolots. Length 110 mm.

Cryptocentrus wehrlei Fowler

1590

Cryptocentrus wehrlei Fowler, Proc.
Acad. Nat. Sci. Philadelphia, vol. 89,
p. 256, fig. 284, 1937 (type locality,
Bangkok, Siam).

Depth $4\frac{7}{8}$; head 3, width $1\frac{4}{5}$. Snout $4\frac{3}{4}$ in head; eye $4\frac{4}{5}$, $1\frac{1}{10}$ in snout, greater than interorbital; maxillary reaches behind eye, length $2\frac{2}{5}$ in head, lips broad, fleshy, smooth, entire; band of fine, uniform, villiform teeth in each jaw; tongue with slight median notch in front; interorbital width 2 in eye, level. Gill opening lateral, extends forward in last half of postorbital region.

Scales very small, largely uniform, 73+6 in median lateral series; 21 trans-

1 close behind preopercle edge on front of opercle. Scales with 14 basal radiating striae; 35 apical denticles; Circuli moderate, not complete apically.

D. VI - 10 or 11, second spine ends in filament or $1\frac{2}{3}$ to 2 in total head length, second ray $1\frac{3}{5}$ to $1\frac{3}{4}$; A. I, 7, last ray $2\frac{1}{8}$ to $2\frac{1}{3}$; caudal 1 to $1\frac{1}{10}$, convex behind; least depth of caudal peduncle $3\frac{7}{8}$ to 4; pectoral

versely, 22 predorsal forward $\frac{2}{3}$ of postocular region of head. Breast and caudal base scaly. Head and prepectoral region naked.
Scales with 18 or 19 basal radiating striae; circuli moderate, obsolete apically.

Ladder of minute papillae on postocular region and cheek; row of papillae along lower face of each mandibular ramus and lower part of preopercle; several bars of papillae on opercle.

D. VI 12, I, third spine $1\frac{1}{2}$ in head, soft dorsal height $1\frac{3}{4}$; A. 11, I, fin height 2; caudal 1, with obtuse median point behind; least depth of caudal peduncle $3\frac{3}{4}$; pectoral $1\frac{2}{5}$, rays II, 17; ventral I, 5, fin $1\frac{1}{4}$. Vent short, flattened, close before anal.

Pale brown, general color largely uniform. Back with 6 dark brown saddles; first, second, fourth and fifth most distinct. Also large dark rounded blotch size of eye at caudal

base. Dark blotch below eye. Eye ¹⁵⁹² gray. Two dark bars on side of snout, band 5 broken, parallel dark lines on side of head behind eye. First dorsal gray, paler below. Second dorsal pale to transparent, with brown line on each membrane between and parallel. Anal pale, with 4 dark parallel longitudinal bands, outermost or border dark gray. Ventral dark gray.

A. Th. S. P., no. . . Bangkok,

Siam. Length 90 mm. Type.

Greatly like Cryptocentrus leonis H. M. Smith, but that species said to have scales "about 125 in longitudinal series from upper angle of branchial aperture and about 30 in transverse series between origin of second dorsal and anal. On "predorsal region scales to a point half way between gill opening and eyes, the scales small, about 33 in median line." In C. wehrlei about 22 scales on predorsal. Smith's species further differs in

"Entire body a uniform reddish-brown¹⁵⁹³
without any markings," whereas
C. wehrlei has five dark cross
bands. C. leonis was based on a
specimen 135 mm. long. In general
coloration, though without the dark
oblique lines on the side of the head,
Bist. lizonicus Seale is somewhat
suggestive.

median axillary process. A gray streak
extends down from the lower eye
edge until opposite the third end of
the maxillary. Lower eyelid free
in all the specimens.

two, 103 to 143 mm., Tachin.

A re-examination of the types
of Boleophthalmus smithi Fowler 1934,
show them synonymous with
the present species, and wrongly
referred to Boleophthalmus. The
Bangkok and Tachin materials listed
above, show a more definite color
pattern than my drawing of the type.
The dark blotches along the bases of
the dorsal fins are all extended

1594

Cryptocentrus yatsui Tomiyama

Cryptocentrus yatsui Tomiyama, Jap.
Journ. Zool., vol. 7, no. 1, p. 81, fig. 31,
1936 (type locality, Tainan market,
Formosa).

Depth 5 to 6; head $3\frac{1}{3}$ to $3\frac{1}{2}$.
Snout 4 to $4\frac{1}{2}$ in head (6
shown in figure); eye 6 to 7,
subequal with snout, greater
than interorbital; maxillary
reaches half an eye diameter
behind eye, length $2\frac{1}{4}$ in head
from snout tip; front of mouth
cleft begins well below level
of eye, lower jaw protruded;
teeth in several rows, outer-
most and innermost rows
larger, outermost lower row
anterior and with 1 or 2 large
canine-like teeth at its end;

1595

tongue rounded anteriorly;
interorbital 8 to $9\frac{1}{2}$, with
eye impinging on upper profile
of head. Low stout fleshy
bridge on inner edge of shoulder,
girdle.

Scales 75 to 85 in lateral
series; 25 transversely. Scales
on body cycloid. Head, pre-
dorsal, pectoral base, breast
and belly naked.

D. VI, I, 10, second spine $2\frac{1}{10}$
in total head length, second
ray 3, tenth ray 2; A. I, 9 or
I, 10, second ray $3\frac{7}{8}$, ninth
ray 2; caudal $1\frac{1}{5}$, convex
behind; least depth of caudal
peduncle 3; pectoral $1\frac{1}{2}$, rays
14; ventral rays I, 5, fin $1\frac{4}{5}$
in total head length. Anal
papilla $1\frac{3}{4}$ in eye.

In formaline brownish

above, paler below. Head and dorsal part of body mottled with darker spots. Row of black irregular dots extending from upper part of opercle to upper part of caudal peduncle. Twenty dark spots in 2 rows along side of body. Fins grayish.

Length 65 to 90 mm. (Yamagata, Formosa).

1596

Genus Chaenogobius Gill

Chaenogobius Gill, Ann. Lyc. Nat.
Hist. New York, vol. 7, p. 12, 1858 (1859).
(Type Chaenogobius annularis Gill,
monotypic.)

Gymnogobius Gill, Proc. Acad. Nat.
Sci. Phila^{vol. 15,}, p. 269, 1863. (Type
Gobius macrognathos Bleeker,
monotypic.)

Chloëa Jordan and Snyder, Proc. U. S.
Nat. Mus., vol. 24, p. 78, Sep. 25, 1901.
(Type Gobius castanea O'Shaughnessy,
designated by Jordan, Genera of Fishes,
pt. 4, p. 494, 1920.)
(Chloëa Savigny 1817 in worms, not
involved.)

1597

Body elongate, compressed, or subcylindrical anteriorly and compressed posteriorly. Head conic, acute, depressed. Snout subequal with eye. Eyes advanced, in front half of head. Mouth large, little inclined, lower jaw little prominent. Teeth moderate, curved, in both jaws in several rows, none enlarged, or upper outer one and lower inner one enlarged, none canines. Tongue bilobate. Bony interorbital narrow. Maxillary extends posteriorly half way to preopercle. Gill openings wide, isthmus moderate. No fleshy flaps on inner edge of shoulder girdle. Scales 65 to 90 in axial lateral series, cycloid, or ctenoid on most parts of body. Head naked, or scaly? Mucous canals and pores indistinct.

1598

Dorsal fins separate, first with
6 to 8 spines, second and anal
with 11 to 14 rays. Caudal
oblong, obtuse or rounded.
Pectoral without free silk like
rays. Ventrals oblong, united,
basal membrane not high.

Analysis of Species

1599

- a.¹ Lower jaw slightly protruding
in front before snout tip.
- b.¹ Anal rays I, 8 to 11.
- c.¹ Dorsal and ventral regions
of body naked. macrognaathos.
- c.² Dorsal parts of body scaly.
- d.¹ Interorbital width equals
eye diameter with age.
- d.² Interorbital width greater
than eye diameter with age. annularis.
- b.² Anal rays I, 12 or 13. wrottaenia
- e.¹ Scales 70 to 75 in lateral series. leptacanthus
- e.² Scales 90 to 100 in lateral series. mororana
- a.² Lower jaw included in upper
with mouth closed. cylindricus

Chaenogobius macrognathos ¹⁶⁰⁰ (Bleeker)

Gobius macrognathos Bleeker, Act.
Soc. Sci. Ind. Néerl. (Jap.), vol. 6,
p. 83, pl. 2, fig. 1, 1860 (type locality,
Rivers of Jeddo near Tokyo).

Gobiosoma macrognathus Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 86, 1861
(copied).

Chaenogobius macrognathus Tomiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 89, fig.
37, 1936 (Hanedo and vicinity of
Tokyo).

Jordan and Snyder, Annot. Zool. Japon.,
vol. 3, p. 112¹⁹⁰¹ (L. Biwa; Yokohama).

~~Chaenogobius macrognathus Tomiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 89, fig.
37, 1936 (Hanedo and vicinity of
Tokyo).~~

1601

Depth 6 to 7; head $3\frac{1}{2}$ to 4, depressed. Snout 3 to $3\frac{1}{2}$ in head from snout tip; eye 5 to 6, $1\frac{3}{5}$ in snout; maxillary extends $\frac{3}{5}$ eye diameter behind eye, length $1\frac{7}{10}$ to $1\frac{4}{5}$ in head from snout tip; interorbital 2 to 3 in eye, which impinges little on upper profile.

Scales 49 to 53 in lateral series. Scales not close set, indistinct, anteriorly on body cycloid, and ctenoid on caudal peduncle. Head, and dorsal and ventral parts of body naked.

D. V to VII, I, 11 or I, 12, third spine $1\frac{1}{8}$ in total head length, second ray $2\frac{2}{3}$, twelfth ray 2; A. I, 9 or I, 10, first ray $3\frac{1}{5}$, eleventh ray $1\frac{9}{10}$; caudal $1\frac{1}{3}$, convex behind; least depth of caudal peduncle $3\frac{1}{5}$; pectoral $1\frac{3}{4}$, rays 18; ventral rays I, 5.

fin $1\frac{2}{3}$ in head. Anal papilla $\frac{3}{4}$ eye. ⁽¹⁹⁰²⁾

Color in formaline - grayish, vermiculated on dorsal part of head and body, and several obscure cross bars on side of body. Anal dark below, edged or fringed with pale. Ventral dark.

Length 40 to 55 mm. (Tomiyama)
Japan.

1603

Chaenogobius annularis (Gill)

Gobius annularis Gill, Ann. Lyc.
Nat. Hist. New York, vol. 7, p. 12, 1858
(1859) (type locality, Hakodate). —
Günther, Cat. Fish. Brit. Mus.,
vol. 3, p. 65, 1861 (copied).

Chaenogobius annularis Jordan and
Snyder, Proc. U. S. Nat. Mus., vol. 24, p.
76, 1901 (copied); Annot. Zool. Japon.,
vol. 3, p. 113, 1901 (Japan).

Chaenogobius annularis annularis Tomiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 90, 1936
(Hakodate to Nagasaki).

1604

Gobius castaneus O'Shaughnessy,
Ann. Mag. Nat. Hist. London, Ser. 4,
vol. 15, p. 145, 1875 (type locality,
Kagasaki).

Chloea castanea Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 79, 1901
(Kagasaki, Misaki, Matsushima,
Aomori, Ysuruga, Niigata).
(Chaenogobius castaneus Jordan and Snyder, Annot.
Zool. Japon., vol. 3, p. 112, 1901 (Kagasaki; L. Biwa).

Gobius laevis Steindachner, Sitzb. Ber.
Akad. Wiss. Wien, vol. 80, pt. 1, p. 138,
1879 (type locality, Hakodate, Japan).

— Snyder, Proc. U. S. Nat. Mus., vol. 42, p. 443,
Aug. 30, 1912 (Nanai; Same; Aikawa; Shioyama;
Uto; Ito; Tanaka, Fishes of Japan, vol. 37, p.
189, July 10, 1927 (Hakata).

Chloea laevis Jordan and Snyder, Proc.
U. S. Nat. Mus., vol. 24, p. 80, 1901 (copied).
Pl. 158, figs. 443-444.

— Jordan and Hubbs, Mem. Carnegie Mus., vol. 10,
no. 2, p. 307, 1915 (Kagaya; Tokyo; Aomori; Echigo;
Akita; Fukuoka; Morioka).

Ocanthogobius breunigii Steindachner

Gobius breunigii Steindachner, Vitzs.
Ber. Akad. Wiss. Wien, vol. 80, pt. 1, p. 140,
1879 (type locality, Hakodate, Japan).

Aboma breunigi Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 71,
1901 (copied).

Chloea nakamurae Jordan and
Richardson, Bull. Bur. Fisher., vol. 27,
p. 265, fig. 13, 1907 (type locality,
Hagaoka).

Chloea senbae Yanaka,
p. 226, 1916 (type locality, Senba-
numa, Ibaraki-ken).

U. S. N. M., no. 6336. Hakodate,
Japan. William Stimpson. Length
45 mm.

U. S. N. M., no. 61680. Nagasaki,
Japan. M. Nakamura. Length
44 to 51 mm. Two examples.
As Chloea nakamurae.

U. S. N. M., no. 49862. Iwumga,
Echizen, Japan. D. S. Jordan and
J. O. Snyder. Length 62 to 68 mm.
Two examples.

U. S. N. M., no. 49863. Aomori,
Rikuuoku, Japan. D. S. Jordan and
J. O. Snyder. Length 34 to 53 mm.
Six examples.

U. S. N. M., no. 49950. Matsushima,
Japan. D. S. Jordan and J. O.
Snyder. Length 48 mm.

U. S. N. M., no. 49970. Nagasaki,
Japan. D. S. Jordan and J. O.
Snyder. Length 43 to 52 mm.
Three examples.

U. S. N. M., no. 71197. Japan.
Bureau of Fisheries. Length 30 to 37
mm. Sixteen examples.

U. S. N. M., no. 71388. Japan.
Aikawa, Rikuzen, Japan. Bureau
of Fisheries. Albatross Expedition
1906. Length 54 to 62 mm. Five
examples.

U. S. N. M., no. 71443. Same, ¹⁶⁰⁹
Riknoke, Japan, in Niigawa
River. Bureau of Fisheries.
Albatross Exploration 1906.
Length 46 to 71 mm. Fifty-eight
examples.

U. S. N. M., no. 71446. Shiogama,
Rikuzen, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 32 to 60 mm. Thirty
examples.

U. S. N. M., no. 71535. Sado.
Sado Island, Oki Group, Japan.
Bureau of Fisheries. Albatross
Expedition 1906. Length 31 to 60
mm. Fifty-three examples.

1610

Chaenogobius wrotaenia (Hilgendorf)

Gobius wrotaenia Hilgendorf, Sitzs.
Ber. naturf. Freunde Berlin, p. 108,
1879 (type locality, Tokyo).

Aboma wrotaenia Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 71, 1901
(copied); Annot. Zool. Japon., vol. 3, p. 113,
1901 (Tokyo). — Jordan, Unaka, Snyder,
Jap. Journ. Zool., vol. 3, pt. 1,
p. 348, 1913 (reference).
Chaenogobius annularis wrotaenia Imiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 91, 1936
(Hidaka, Hokkaido to Kawanabe,
Raman, Korea; type of Chaenogobius
isaya).

1611

Chaenogobius macrognathos (not
Bleeker) Jordan and Snyder, Proc.
U. S. Nat. Mus., vol. 23, ~~1900~~ p. 372,
1900 (Tokyo; Lake Biwa); vol. 24,
p. 76, fig. 13, 1901 (Funaki, Kurume,
Aomori, Tokyo, Tsuruga, Chitose,
Matsubara, Same, Wifu, Nagoya,
Owari, Kawatana). — Jordan and
Fowler, Proc. U. S. Nat. Mus., vol. 25,
p. 576, 1902 (Yodo River, Japan).

Chloea aino Schmidt, Pisc. Mar.
Orient.,
p. 207, 1904 (type locality, Arakel River,
Lake Tunaitchi, Saghalien). — Jordan,
Tanaka, Snyder, Jur. College. Sci. Tokyo,
vol. 33, ser. 1, p. 351, 1913 (reference). — Fowler,
Agassiz in Japan Chiroptera, vol. 4, p. 208, 1930 (copied).
Chaenogobius isaza Tanaka,

p. 102, 1916 (type locality, Lake Biwa).

Depth $4\frac{2}{3}$ to $6\frac{1}{2}$; head $3\frac{1}{5}$ to $3\frac{2}{5}$. Snout $3\frac{1}{4}$ to $3\frac{2}{5}$ in head from snout tip; eye $5\frac{3}{4}$ to 6, $1\frac{2}{3}$ to $1\frac{4}{5}$ in snout, $1\frac{1}{2}$ in interorbital; maxillary reaches $\frac{1}{2}$ in eye to its hind edge, length 2 to $2\frac{3}{4}$ in head from snout tip; front end of mouth cleft opposite or level with lower eye edge, lower jaw protruding; teeth very small, simple, in narrow bands in jaws, outer but little enlarged; tongue with front end notched; interorbital low, eye scarcely or not impinging on upper profile. Gill rakers $2+8$, short, rather slender.

Scales 75 to 90 in lateral series; 20 to 25 transverse; 25 to 35 predorsal. Head scaleless, and body with small

1613

cycloid or xteroid scales, usually
latter persist on tail.

D. VI or VII — I, 10 to I, 12, third
spine 3 in head, first
branched ray $2\frac{3}{4}$ to 3; A.
I, 10 or I, 11, first branched ray
4; caudal $1\frac{2}{5}$ to $1\frac{3}{5}$, convex
behind; least depth of
caudal peduncle $2\frac{4}{5}$ to 3;
pectoral $1\frac{1}{3}$ to $1\frac{3}{4}$, rays 19
or 20; ventral rays I, 3, length
 $1\frac{3}{4}$ to $1\frac{7}{8}$ in total head length.

Dull brown, mottled above
with darker gray or brown.
About 9 or 10 variably distinct
rather large axial blotches.
Head mottled or variegated
with darker. Fins brownish,
with blackish posterior blotch
marginally on first dorsal,
edge narrowly dark. Both
dorsals with dark spots on
spines and rays, separating pale

1614
or whitish spots. Caudal rays
with dark spots. Soft vertical
fins with whitish margins.
Pectoral pale. Ventral dark
brown.

Japan, Korea.

U. S. N. M., no. 45347. Gunsan,
Korea. P. L. Jouy. Length 35 to 67
mm. Thirty examples.

U. S. N. M., no. 45348. Gunsan,
Korea. 1886. P. L. Jouy. Length
35 to 55 mm. Five examples.

U. S. N. M., no. 45349. Gunsan,
Korea. July 1886. P. L. Jouy.
Length 52 to 74 mm. Two examples.

U. S. N. M., no. 49501. Lake
Biwa, Japan. C. Ishikawa.
Length 57 to 61 mm. Two examples.

U. S. N. M., no. 49928. Iwumaga,
Echizen, Japan. J. O. Snyder
and D. S. Jordan. Length 101
mm.

U. S. N. M., no. 49944. Funaki,
Ami, Japan. Imperial Mus. Jap.
Length 100 mm.

U. S. N. M., no. 49958. Lake
Biwa, Japan. D. S. Jordan and
J. O. Snyder. Length 32 to 85 mm.
Seven examples.

> U. S. N. M., no. 49968. Amore,
Rikuoiku, Japan. D. V. Jordan
and J. O. Snyder. Length 35 to 44
mm. Twenty-three examples.

U. S. N. M., no. 59560. Kochi,
Japan. May 11, D. H. M.
Smith. Length 95 mm.

U. S. N. M., no. 71390. Tomakomai,
Hokkaido, Japan. Bureau of
Fisheries. Length 52 to 95 mm.
Twenty-two examples.

U. S. N. M., no. 49500. Tokyo, Japan.
K. Otake. Length 86 to 90 mm.
Two examples.

U. S. N. M., no. 51493. Aniwa
Bay, Arakut River, 1901. P. Schmidt.
Length 123 mm. As Chloea aine.

1619

Chaenogobius heptacanthus (Hilgendorf)

Gobius heptacanthus Hilgendorf,
Sitzs. Naturf. Fr^unde Berlin, p. 110,
1879 (type locality, Tokyo Bay).

Aboma heptacanthus Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 70, 1901
(copied); Annot. Zool. Japon., vol. 3, p. 113,
1901 (Yokohama). Jordan, Tanaka, Snyder,
Journ. College Sci. Tokyo, vol. 33, Art. 1, p. 348,
1913 (reference).
Chaenogobius heptacanthus heptacanthus
Tomiyama, Jap. Journ. Zool., vol. 7, no.
1, p. 91, 1936. (Misaki to Nagasaki).

Chloea sarchynnus Jordan and Snyder,¹⁶²⁰
Proc. U. S. Nat. Mus., vol. 24, p. 82, fig.
15, 1901 (type locality, Wakaroura,
Japan). — Franz, Abhandl. Kon.
Bayer. Akad. Wiss., vol. 4, Suppl.
Band 1, p. 67, 1910 (Fukuura). —
Jordan, Tanaka, Snyder, Amot.
Journ. College Sci. Tokyo, vol. 33, Art. 1,
p. 352, 1913 (reference).

Depth $5\frac{1}{2}$ to 6; head $3\frac{2}{3}$ to
 $3\frac{7}{8}$. Snout $3\frac{1}{2}$ to $4\frac{1}{5}$ in
head from snout tip; eye $3\frac{3}{4}$
to 4, little longer to subequal
with snout; maxillary extends
 $\frac{1}{3}$ eye diameter beyond eye,
length $1\frac{4}{5}$ to 2 in head from
snout tip; mouth begins nearly
level with middle of eye, lower
jaw little protruded in front;
teeth in narrow bands in jaws,
very small, slender, pointed;

1621

Tongue deeply notched in front; interorbital low, level, equal or subequal with eye. Gill rakers $6 + 14$, long, very slender.

Scales 70 in lateral series; 18 to 20 transversely between dorsals and anals. Head scaleless, also predorsal, prepectoral region, chest and breast. Scales on body all finely ctenoid, and on back in front extend forward over opercle.

D. VII - ^{12 or} 13, third spine $2 \frac{1}{3}$ in total head length, third ray $2 \frac{2}{5}$; A. ^{12 or} 13, third ray $2 \frac{4}{5}$; caudal $1 \frac{2}{5}$, rounded or truncate behind; least depth of caudal peduncle 3; pectoral $1 \frac{3}{5}$, rays 20 or 19, ventral I, 5, fin $1 \frac{1}{2}$ in total head length.

Body brown, with lateral

1622

axial series of 15 or 16 dark
gray blotches, of which 1 or
several united. Back mottled
with dark gray. Dark bar
from front of eye to front of
maxillary. Iris pale, with
dark posterior spot on spinous
dorsal and each soft dorsal
ray with 2 dark spots.
Japan.

U. S. N. M., no. 49920. Wakanoura,
Kii, Japan. D. S. Jordan and
J. O. Snyder. Length 36 to 38
mm. Two examples. "Cotypes"
[= paratypes] of Chloea sarchynnis.

U. S. N. M., no. 45335. Corea.
P. L. Jouy. Length 60 mm. As
Chloea sarchynnis.

1624

Chaenogobius mororana (Jordan and Snyder)

Chloea mororana Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 80, fig.
14, 1901 (type locality, Mororan;
~~Hakodate~~ Tokyo and Matsushima
Japan). — Franz, Abhand. Kon. Bayer.
Akad. Wiss., vol. 4, Suppl. Band 1, p.
67, 1910 (Fukuoka). — Jordan, Yanaka,
Snyder, Journ. College Sci. Tokyo, vol. 33,
Art. 1, p. 351, 1913 (reference).

Chaenogobius ^{fig. 303,} heptacanthus murorana
Tomiyama, Jap. Journ. Zool., vol. 7, no. 1,
p. 92, 1936 (Tisima?; Muroran; Tatukawa;
Ibaraki).

Chloea bungei Schmidt, Trans. Pac. Comm.
Acad. Sci. U.S.A., vol. 2, p. 119, fig. 5, 1931
(type locality, Seikosin, Korea).

1625

Depth $5\frac{7}{8}$ to $6\frac{1}{4}$; head $3\frac{3}{5}$ to $3\frac{3}{4}$. Snout $3\frac{1}{3}$ to $3\frac{3}{4}$ in head from snout tip; eye $5\frac{1}{3}$ to $5\frac{1}{2}$, $1\frac{1}{4}$ in snout, subequal with interorbital; maxillary extends eye diameter beyond eye, length $1\frac{1}{3}$ to $1\frac{2}{3}$ in head from snout tip; mouth cleft begins level with lower pupil edge, length lower jaw protruding in front; teeth in narrow bands in jaws, villiform, outer slightly enlarged; tongue notched in front; interorbital flat. Gill rakers $5 + 19$.

Scales 90 in lateral series; 26 transversely. Head scales, also predorsal, prepectoral region, chest, breast, and belly medially. Body with very small cycloid scales, not extending on fins.

1626

D. VII- 13, third spine $2\frac{1}{2}$
in total head length, third
ray $2\frac{2}{3}$; A. 12, third ray 3;
caudal $1\frac{1}{3}$, convex behind;
least depth of caudal peduncle
 $3\frac{1}{3}$; pectoral $1\frac{3}{5}$, rays 21;
ventral rays I, 5, for $1\frac{1}{2}$ in
total head length.

Pale or light brown, with
dark mottling or clouding on
back. Fins pale brown, with
dark spots on soft dorsal
rays. Indistinct dark spots
on caudal rays. Sometimes
lower fins and gill membranes
dark.

Korea, Japan.

U. S. N. M., no. 49942. Matsushima,
Rikuzen, Japan. U. S. Jordan and
J. O. Snyder. Length 46 to 58 mm.
Four examples.

U. S. N. M., no. 71424. Shiogama,
Rikuzen, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Twenty-one examples. Length
28 to 54 mm.

U. S. N. M., no. 71445. Mororan,
Japan. July 6, 1906. Bureau of
Fisheries. Albatross Expedition.
Length 35 to 82 mm. 152 examples.

U. S. N. M., no. 71444. Mororan,
Japan. July 6, 1906. Bureau of
Fisheries. Albatross Expedition.
Length 39 to 78 mm. 239 examples.

1628

Chaenogobius cylindricus Tomiyama

Chaenogobius cylindricus Tomiyama,
Jap. Journ. Zool., vol. 7, No. 1, p. 92, fig.
39, 1936 (type locality, Hiroshima).

Depth 7; head 4, depressed.
Snout 4 in head (figure shows
 $4\frac{1}{2}$); eye $5\frac{1}{2}$ (figure shows
6), $1\frac{2}{5}$ in snout, greatly
exceeds interorbital; maxillary
reaches eye diameter behind
eye, length 2 in head; mouth
but little inclined, low, lower
jaw shorter; teeth villiform,
in band in jaws, outer upper
row larger; tongue notched
anteriorly; interorbital $8\frac{1}{2}$,
with eyes impinging on upper
profile. Inner edge of gill
opening with low fleshy ridge.

1629

Scales 80 in lateral series,
39 transversely. Scales cycloid,
larger on tail or posteriorly.
Head, predorsal, breast, belly
and pectoral base naked.
Paired pores on hind part of
interorbital space close together.

D. VI - I, 11, third spine $2\frac{1}{10}$
in head, first branched ray
 $2\frac{7}{8}$, penultimate ray $2\frac{1}{3}$;
A. I, 10, first branched ray $3\frac{1}{8}$,
eighth $2\frac{1}{6}$; caudal $1\frac{1}{10}$, convex
behind; least depth of caudal
peduncle $3\frac{1}{10}$; pectoral $1\frac{1}{3}$,
rays 17; ventral rays I, 5, fin
 $1\frac{1}{3}$ in head.

Color in formaline dark
brownish, with darker mottling.
Anal and ventral blackish.

Length 55 mm. (Tomiyama)
Japan. Known by its slender
body and included lower jaw.

Depth 273 4-3.

1630

Genus Chasmichthys Jordan

Chasmichthys Jordan, Amer. Nat.,
vol. 35, p. 941, 1901. (Type Chasmias
misakius Jordan and Snyder,
virtually. Chasmichthys Jordan proposed
to replace Chasmias Jordan and
Snyder).

Saccostoma (not) Sauvage,
Bull. Soc. Philom., Paris, ser. 7, vol.
6, p. 171, 1882. (Type Saccostoma
gulosum ^(Guichenot), Sauvage, monotypic.)

Chasmias (not) Jordan and
Snyder, Proc. U. S. Nat. Mus., vol. 23,
p. 76, 1901. (Type Chasmias misakius
Jordan and Snyder, monotypic.)

1631

Body elongate, compressed. Head depressed. Snout twice eye. Eyes advanced, in front half of head. Mouth horizontal, wide, jaws subequal. Maxillary extended posteriorly beyond eye. Teeth in several rows, none enlarged. Tongue notched. Bony interorbital twice eye diameter. Gill opening wide, not continued forward below. Isthmus broad. Inner edge of shoulder girdle without fleshy flaps. Scales 60 to 100 in axial lateral series, cycloid. Head nearly naked above behind eyes, no scales on cheek. Dorsal fins separate, first with 6 spines, second with 11 or 12 rays. Anal rays 10 or 11. Caudal obtuse. Pectoral with some free silk like rays. Ventrals united, under pectorals, free from belly, rays with many branches.

Analysis of Species

- a.¹ Scales 58 in lateral series,
19 or 20 transverse. cliticognathus
- a.² Scales 89 or 90 in lateral series,
28 transverse. gulosus

1633

Chasmichthys dolichognathus Hilgendorf

Gobius dolichognathus Hilgendorf, Vitzg.
Ber. Nat. Freunde Berlin, p. 108,
1758 (type locality, Tokyo).

Chasmias dolichognathus Jordan and
Snyder, Proc. U. S. Nat. Mus., vol. 24,
p. 84, fig. 16, 1901 (Misaki, Wakanoura,
Nagasaki, Tsunaga, Matsushima,
Enoshima, Hakodate, Same). —
Franz, Abhand. Kon. Bayer. Akad.
Wiss., vol. 4, Suppl. Band 1, p. 67, 1910

(Aburatsubo).
Chaenogobius dolichognathus Jordan and Snyder,
Annot. Zool. Japon., vol. 3, p. 112, 1901 (Yokohama; Tokyo).

Chasmichthys dolichognathus dolicho-
gnathus Tomiyama, Jap. Journ. Zool.,
vol. 7, no. 1, p. 93, 1936 (Kagoshima to
Hiigata and Kesen; Habu and
Motomura, Osima, Idu-situ-tô).

1034

Depth $5\frac{1}{3}$ to 6; head $3\frac{1}{3}$ to $3\frac{2}{5}$.
Snout 3 to $3\frac{1}{5}$ in head; eye
 $5\frac{1}{2}$ to 6, $1\frac{2}{3}$ in snout; maxillary
extends half an eye diameter
behind eye, length $1\frac{2}{3}$ in head;
mouth cleft begins well
below level of lower edge of
eye, very slightly inclined,
lower jaw included in upper
as closed; lips rather fleshy;
teeth in narrow bands in
jaws medially, fine, villiform,
outer upper row little enlarged;
interorbital low, 4 in head.
Gill rakers 3 + 8, very small,
slender.

Scales 58 in lateral series;
19 or 20 transversely. Head
scaleless, also predorsal, pre-
pectoral and chest. Scales small,
feeble, cycloid.

1635

D. VI - 11, third spine $2 \frac{1}{10}$,
fifth ray 2; A. 10, sixth ray
 $2 \frac{1}{4}$; caudal $1 \frac{2}{5}$, convex behind;
least depth of caudal peduncle
 $2 \frac{2}{3}$; pectoral $1 \frac{2}{5}$, rays 20;
ventral rays I, 5, fin 2 in
head.

Brown, with 10 dark transverse
irregular bars or blotches on
back and sides. Dark blotch
behind pectoral base and another
at caudal base. Head variegated
above with dark dots and bars.
Dorsals, caudal and pectoral with
8 to ten dark spots on each spine
or ray, forming oblique bands on
former and transverse bands on
latter.

Japan.

U. S. N. M., no. 45334. Korea.
P. L. Jouy. Length 51 mm. Two
examples.

U. S. N. M., no. 49859. Wakanoura,
Japan. D. S. Jordan and J. O. Snyder.
Length 33 to 67 mm. Four
examples.

U. S. N. M., no. 49888. Hakodate,
Hokkaido, Japan. D. S. Jordan and
J. O. Snyder. Length 51 to 63 mm.
Three examples.

U. S. N. M., no. 49908. Enoshima,
Sagami, Japan. D. S. Jordan and
J. O. Snyder. Length 34 to 69 mm.
Eighteen examples.

U. S. N. M., no. 49911. Yodo River,
Osaka, Japan. D. S. Jordan and
J. O. Snyder. Length 61 mm.

U. S. N. M., no. 49927. Iwuroga,
Japan. D. S. Jordan and J. O.
Snyder. Length 34 to 38 mm.
Two examples.

1637

U. S. N. M., no. 70754. Misaki,
Sagami, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 25 to 69 mm. 135
examples.

U. S. N. M., no. 71410. Akune,
Satsuma, Japan. Bureau of
Fisheries. Albatross Expedition 1906.
Length 18 to 38 mm. ninety-two
examples.

U. S. N. M., no. 71411. Same,
Rikuo-ku, Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length 46
to 74 mm. Twenty-three examples.

U. S. N. M., no. 71412. Hakodate,
Japan. Bureau of Fisheries. Albatross
Expedition 1906. Length 23 to 63 mm.
110 examples.

U. S. N. M., no. 71435. Tanegashima
Island, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 32 to 81 mm. Twenty
examples.

1638
U. S. N. M., no. 71441. Same,
Rikuo-ku, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 43 to 73 mm.
Forty examples.

U. S. N. M., no. 71506. Aikawa,
Rikuzen, Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length
16 to 64 mm. 109 examples.

U. S. N. M., no. 89416. Takami,
near Chochi, Japan. June 23, 1929.
A. S. Pearse. Length 55 mm.

Chasmichthys gulosus (Savoye) 1639

Saccostoma gulosum (Guichenot) Savoye,
Ann. Arch. Mus. Hist. Nat. Paris,
ser. 2, vol. 4, p. 172, 1881 (type locality,
Japan).

Chasmichthys dolichognathus gulosus
Yoniyama, Jap. Journ. Zool., vol. 7, no. 1,
p. 93, 1936 (Nagasaki to Kesen, Iwateken,
Atumi, Yamagata).

Chasmias misakius Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, p. 761, pl. 36,
1901 (type locality, Misaki; Trishima;
Nagasaki; vol. 24, p. 86, 1901 (types;
Enoshima; Habodate). — Franz,

Abhandl. Kon. Bayer. Akad. Wiss., vol. 4,
Suppl. Band 1, p. 67, 1910 (Ibura-tsubo).

Chasmichthys misakius Jordan and
Fowler, Proc. U. S. Nat. Mus., vol. 25, p.
576, 1902 (Wakamouura).

1640

Depth $4\frac{2}{3}$ to $4\frac{7}{8}$; head 3 to $3\frac{1}{8}$. Snout 3 to $3\frac{2}{5}$ in head; eye 5 to $5\frac{4}{5}$, $1\frac{3}{5}$ to $1\frac{2}{3}$ in snout; maxillary extends 1 to $1\frac{1}{5}$ times eye behind eye, length $1\frac{2}{5}$ to $1\frac{3}{5}$ in head; mouth very large, low, lower jaw well included in upper; teeth uniformly villiform, in bands in jaws; tongue slightly notched in front; interorbital flow, 3 to $3\frac{1}{5}$ in head. Gill rakers 3 + 10, short, slender.

Scales 89 in lateral series; 28 transversely. Head scaleless, obsolete scales on front of predorsal and prepectoral and chest scaleless. Scales crowded, irregular, minute and little evident on breast and belly.

D. VI - 11, Third spine 3 in head, third ray $2\frac{7}{8}$; A. 10, third

641

ray $3\frac{1}{4}$; caudal $1\frac{1}{2}$, convex behind;
least depth of caudal peduncle
 $2\frac{3}{4}$; pectoral $1\frac{4}{5}$, rays 20 or 21;
ventral rays I, 5, fin $2\frac{4}{5}$ in
head.

Brown, paler below, especially
under surface of head and
belly. Sides of body with
variable whitish spots or dots.
Vertical fins with white borders.
Fin membranes brownish, with
faint ill defined spots. Paired
fins uniform.
Japan.

U. S. N. M., no. 45353. Isehima,
Japan. 1885. P. L. Jouy.
Length 95 mm.

U. S. N. M., no. 49709. Misaki,
Japan. D. S. Jordan and J. D.
Snyder. Length 99 to 105 mm.
Three examples. "Co-types."

U. S. N. M., no. 49885. Enoshima,
Sagami, Japan. D. S. Jordan and
J. D. Snyder. Length 43 mm.

U. S. N. M., no. 49948. Misaki,
Sagami, Japan. D. S. Jordan and
J. D. Snyder. Length 38 to 111 mm.
Thirteen examples. "Co-types."

U. S. N. M., no. 57698. Japan.
P. L. Jouy. Length 78 to 124 mm.
Fourteen examples.

U. S. N. M., no. 59563. Kochi and
Urado, Japan. Dr. H. M. Smith.
Length 77 mm.

U. S. N. M., no. 45339. Fusan, Korea.
P. L. Jouy. 1885. Length 52 to 107
mm. Three examples.

U. S. N. M., no. 45340. Fusan,
Korea. P. L. Jouy. Length 73 to 79
mm. Two examples.

U. S. N. M., no. 45342. Fusan,
Korea. P. L. Jouy. 1885. Length
41 to 122 mm. Eighteen examples.

U. S. N. M., no. 70726. Misaki,
Sagami, Japan. Bureau of Fisheries.
Albatross Collection 1906. Length
55 to 127 mm. Thirty-seven examples.

U. S. N. M., no. 71080. Kagoshima,
Satsuma, Japan. Bureau of
Fisheries. Albatross Collection.
Length 42 to 111 mm. Twenty-five examples.

U. S. N. M., no. 71279. Aikawa,
Rikuzen, Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length
74 to 118 mm. Two examples.

1644
U. S. N. M., no. 71438. Shimonoseki,
Japan. Bureau of Fisheries.
Albatross Expedition. Length
115 mm.

U. S. N. M., no. 71439. Misaki,
Sagami, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 33 to 108 mm. 104 examples.

U. S. N. M., no. 71440. Aburatsubo,
Satsuma, Japan. Bureau of
Fisheries. Albatross Expedition 1906.
Length 35 to 98 mm. Eighty-eight
examples.

Genus Myersina Herre

Myersina Herre, Fishes of Herre 1931
Philippine Exped., p. 89, 1934. (Type
Myersina macrostoma Herre,
orthotypic.)

Body laterally compressed, front & dorsal profile forming gentle convex curve from dorsal origin to snout tip. Head large. Eyes prominent, very close together. Mouth large, oblique. Maxillary projecting backward to lower part of preopercle. Lower jaw strongly projects. Upper jaw with 2 or 3 rows of small teeth, lower with 1 or 2. Vomer with 2 large flat teeth. Gill opening broad, extends well forward. Isthmus moderately broad. Branchiostegals 5. Scales 50 to 75 in lateral

series. Head, predorsal region, and strip back to second dorsal origin, pectoral base, belly, and area extending upward diagonally from anus to pectoral axil, naked. Rest of body with very small, irregular cycloid scales, with narrow strip of scales extending to upper angle of pectoral base. First dorsal with 6 spines, second dorsal with spine and 10 rays; first dorsal spine elongated, fin well in advance of second dorsal. Anal with spine and 10 rays.

This genus is described without reference to any affiliation, but surely is close to Waitea. Though the elongated first dorsal spine is noted as a generic character, the figure

1647
of Waitea maxillaris macleay by
~~Dyer~~ McCulloch and Ogilby
shows this same feature.
The range of scalation seems
to be therefore about the only
other character, given in the
generic account as 50 to 75
scales, and in the specific
account as about 60 scales,
apparently all based on "the type
and only specimen".

Myersina macrostoma Herre

Myersina macrostoma Herre, Fishes
of Herre 1931 Philippine Exped., p. 90,
1934 (type locality, Reef in Culion
harbour). — Roxas and Martin,
Depart. Agric. Comm. Manila, Techn.
Bull. 6, p. 238, 1937 (reference).

1649

Depth $4 \frac{3}{4}$; head $3 \frac{3}{7}$. Snout
 $4 \frac{3}{5}$ in head; eye $2 \frac{3}{4}$, greater
than snout; maxillary $1 \frac{4}{5}$
in head; 2 or 3 rows of upper
teeth, -apparently single lower
row, none canines; vomer with
2 very large chisel-like teeth;
tongue narrow, with free rounded tip;
eyes very close together, inter-
orbital but a hair's breadth.

Scales 60 in lateral series;
24 transversely. Head, pectoral
base, belly and strip below
first dorsal back to second
dorsal origin naked, rest of
body covered with very small
cycloid scales.

D. VI - I, 10, first spine
greatly elongated and fila-
mentous or $2 \frac{3}{4}$ in length;
second dorsal rays $5 \frac{2}{5}$, or $1 \frac{3}{5}$
in head; A. I, 10, rays of
nearly uniform height, little
higher than second dorsal, $4 \frac{3}{4}$
in length; caudal $3 \frac{4}{5}$; pectoral

1650
4 ²/₅, pointed, elongate; ventral
4 ¹/₂, narrow, united, with
small, well defined basal cup.

In alcohol dusky brown,
belly paler, with numerous
darker dots on sides of head,
pectoral base, and lower
half of trunk. From nape
broad pale band back to
and includes upper part of
caudal. Elongate first dorsal
spine black, rest of fins like
body, except upper part of caudal
already noted and rather
pale Pectorals.

Length 19 mm.

Philippines.

(Herre.)

1651

Genus Paroxywrichthys Bleeker

Paroxywrichthys Bleeker, Verslag. Kon.
Akad. Wet. Amsterdam, ser. 2, vol. 9,
p. 140, 1876. (Type Paroxywrichthys
typus Bleeker, monotypic.)

Body elongate, compressed. Head compressed. Snout blunt, long as eye. Eye advanced, in front half of head. Mouth oblique, lower jaw prominent. Teeth in upper jaw in 2 or 3 rows, outer enlarged; lower teeth in 3 or 4 rows, no canines. Tongue truncate to slightly bilobate. Bony interorbital $\frac{1}{2}$ to one eye diameter. Gill openings not very wide, long as pectoral basal width, isthmus wide. Branchiostegals 5. Inner edge of shoulder girdle without fleshy flaps. Scales 58 to 80 in axial lateral series, stenoid on hind part of body, cycloid on front part, breast and belly scaled. Head scaled above behind eyes or naked, neck scaled, and opercle scaled on

1653

upper half or naked. Mucous
canals not distinct. Oper pore
each side on snout, one each
side after eye, and some
on upper and posterior edges
of preopercle. Dorsal fins
separate, first with 6 spines,
second with 11 to 15 rays. Anal
rays 11 to 16. Caudal much longer
than head. Pectoral without
free silk like rays. Ventrals
united, oblong, under pectorals.

Parao

1654

Oxyurichthys laterisquamatus (Weber)

Gobius

*, (Oxyurichthys) laterisquamatus Weber,
Nova Guinea, vol. 5, pt. 2, p. 261, 1908
(type locality, Tami Basin, north
New Guinea). — Koumans, Prelim.
Revis. Gobioid Fishes, p. 105, 1931
(reference).

Oxyurichthys laterisquamatus Fowler,
Mem. Bishop Mus., vol. 10, p. 415, 1928
(copied).

1655-

Depth 6; head $4\frac{3}{4}$, its depth half its width. Snout obtuse, convex; eye 5 in head, less than snout, ~~mouth cleft~~ greater than interorbital; mouth cleft reaches $\frac{1}{3}$ in eye, oblique; teeth small, conic, brown in color, outer row both above and below enlarged; tongue little convex; interorbital little over half of eye.

Scales 60 in lateral series; 12 transversely. Predorsal forward to eyes, cheeks, opercles sparsely scaly. Anteriorly on body scales cycloid and smaller.

D. VI, 11, spines elongated, likewise rays of second dorsal which reach caudal; A. 11, rays but little shorter than second dorsal.

Color yellowish, with obscure cross bands. Back appears darker, due to dark edges of scales.

1656

Dorsals, anal and upper caudal
rays blotched with darker.
Paired fins hyaline, with
black blotch on upper third of
pectoral base.

Length 117 mm. without caudal.
(Weber.)

East Indies.

1657

Paroxyurichthys typus Bleeker

Paroxyurichthys typus Bleeker,
Verslag. Kon. Akad. Wet. Amsterdam,
ser. 2, vol. 9, p. 140, 1876 (type locality,
Amboina) — Koumans, Prelim. Rev.
Gobioid Fishes, p. 105, 1931 (reference).

Depth 7; head $5\frac{3}{5}$, width 2.
Snout obtuse, convex, shorter than
eye; eye $4\frac{1}{2}$ in head, greatly
exceeds interorbital, without
tentacle above; maxillary reaches
below posterior part of eye,
mandible scarcely protruding;
lips slender; mouth oblique;
upper teeth with outer enlarged
series, none canines; lower
teeth triserial, quadriserial,
small, slender, outer series
longer, subequal, none canines;
tongue deeply notched; interorbital

less than $\frac{1}{3}$ of eye.

1658

Scales 80 in lateral series;
16 or 17 transversely between
second dorsal ³⁵ and anal; ^{predorsal}
~~Predorsal region scaly forward~~
~~over opercle.~~ forward to eyes.
Postocular groove distinct.
Predorsal scales, chest, breast,
and scales on sides cycloid,
posteriorly ctenoid. Cheeks
with longitudinal lines of papillae
little distinct.

D. VI, I, 13 or 14, fins sub-
contiguous, spines lower than
body depth, also rays similar;
A. I, 14 or 15, little lower than
second dorsal; caudal obtuse,
rounded, much less than twice
head length; pectoral rays 17,
acutely rounded, little shorter
than head; ventral rays I, 5,
little shorter than pectoral.
Anal papilla obtuse, short.

1659
Body above rose green, below
silvery. Iris yellowish rose.
Fins yellowish or rose hyaline,
without spots or bands.

Length 114 mm. (Bleeker)

East Indies.

1660

Genus Biat Seale

Biat Seale, Philippine Journ. Sci.,
vol. 4, no. 6, p. 532, 1909. (Type
Biat luzonica Seale, designated.)

Body elongate, cylindrical. Head blunt. Snout long as eye. Eyes advanced or in front half of head. Mouth oblique, lower jaw little prominent. Teeth in upper jaw in 4 rows of very small depressible teeth and an outer row of enlarged fixed teeth, some of those in front canine-like. Teeth in lower jaw biserial, fixed, ~~some in front~~ and short inner row of stout, backward-curved canines. Tongue rounded. No barbels or tentacles. Gill openings wide, advanced. Interorbital space narrow.

1661
little forward below. Scales
110 in lateral axial series,
ctenoid. Head entirely naked.
Dorsal fins separated, first
with 6 spines, second with 16
rays. Anal rays 17. Caudal
longer than head, lanceolate.
Ventrals united.

Biat luzonica Seale

Biat luzonica Seale, Philippine Journ.
Sci., vol. 4, no. 6, p. 532, 1909 (type
locality, East coast of Luzon). —
Roxas and Martin, Depart. Agric.
Comm. Manila, Tech. Bull. 6, p. 236,
1937 (reference).

Biat luzonicus Herre, Gobies of
Philippines, p. 246, pl. 20, fig. 1, 1927
(type); Fisher Herre 1931 Philippine
Exped., p. 91, 1934 (Lamon Bay; Alabat;
Cebu).

Depth $5 \frac{1}{10}$. (figure shows $5 \frac{2}{3}$ ¹⁶⁶³);
head $3 \frac{3}{4}$, width $1 \frac{3}{5}$. Snout
 $4 \frac{1}{4}$ in head from snout tip,
eye with conspicuous median
bump; eye $4 \frac{2}{5}$, subequal with
snout, greatly exceeds interorbital.
maxillary reaches $\frac{1}{3}$ in eye, length
 $2 \frac{2}{3}$ in head from snout tip;
mouth begins about level with
lower eye edge, well inclined,
lower jaw protruding in front;
upper teeth in 5 rows, outer
row much enlarged and fixed,
with 4 in forward part canini-
form and curved backward,
other 4 rows of very fine, sharp-
pointed, denticulate teeth; lower
teeth 3 rows, uppermost all fixed,
inner row much shortest of 5
stout curved canines each side;
nostrils in front of middle of
eye, anterior one small, closed
(tubulate?), larger posterior open;

1664

interorbital very narrow, width less than $\frac{1}{3}$ of eye.

Scales 104 in lateral series; 30 transverse, 20 predorsal. Pore behind upper part of eye, one behind middle of eye bet beginning of suprapercular groove and 3 more along it and 3 on hind margin of prepercle.

D. VI - I, 15, third spine $1\frac{2}{5}$ in total head length, second ray $2\frac{2}{3}$, fourteenth ray $1\frac{4}{7}$; A. I, 16, second ray 3, last ray $2\frac{1}{8}$; caudal $3\frac{1}{2}$ in rest of fish; least depth of caudal peduncle $2\frac{2}{3}$; pectoral $1\frac{1}{3}$, rays 16; ventral rays I, 5, fin $1\frac{1}{5}$ in total head length. Anal papilla short, thick, cylindrical, blunt.

In alcohol yellowish brown, with 5 broad, dark brown cross bands, without distinct margins, over back and sides, and spot

of same color on snout and
interorbital space; first band
crosses nape and descends
upon opercle; second from
middle of first dorsal to
belly; third from front portion,
and fourth posterior portion of
second dorsal; fifth on basal
portion of caudal. Traces of few
pale spots on upper part of
head behind eye. First dorsal,
except anterior third, very dark
brown. Second dorsal and
caudal yellowish, latter with
black band along its lower
margin. Anal yellowish with
very dark brown tips to rays.
Pectorals yellowish. Ventrals
dark brown.

Length 175 mm. (Herre.)
Philippines.

Genus Oxyurichthys Bleeker

Oxyurichthys Bleeker, Act. Soc. Sci.
Ind. Néerl. (Celebes), vol. 8, p. 44, 1860.

(Type Gobius belosso Bleeker, monotypic.)

Oxyurichthys Bleeker, Arch. Néerl. Sci.

Ind. Harlem, vol. 9, p. 324, 1874. (Type
~~Oxyurichthys~~ Gobius belosso Bleeker, orthotypic.)

Gobiichthys Klunzinger, Verh. zool. bot.

Ges. Wien, vol. 21, p. 479, 1871. (Type

Apocryptes petersii Klunzinger, monotypic.)
(Gobiichthys)

Pselaphias Jordan and Seale, Bull.

Bur. Fisher., vol. 25, p. 406, 1905 (1906).

(Type Gobius ophthalmoneura Bleeker,
monotypic).

(Oxyurichthys Marschall, Mones. Zool.,
p. 86, 1873. (Type Gobius belosso
Bleeker.)

Body elongate, compressed. Head compressed. Snout blunt, long as eye. Eyes advanced, in front half of head, sometimes with tentacle at upper edge. Mouth oblique, lower jaw prominent. Teeth in upper jaw in one row, in lower jaw 2 to 4 rows, sometimes inner row enlarged. Upper teeth strongly developed, canine like, ^{not} true canines. ^{nostrils not tubular.} Tongue rounded. Bony interorbital $\frac{1}{4}$ of eye diameter. Gill openings moderate, long as basal pectoral width, isthmus wide. Branchiostegals 5. Inner edge of shoulder girdle without fleshy flaps. Scales 30 to 100 in axial lateral series, ctenoid on hind part of body, cycloid on front part. Breast and belly scaled.

neck more or less scaled,
preopercle and opercle usually
naked? mucous canals on snout,
obliquely down from eye and
one along mandible to hind
edge of preopercle. Open pore
on each side of snout, one in
median line after eye, one each
side after eye, and some along
upper and hind edges of
preopercle. Dorsals nearly continuous
first with 6 spines, second with
11 to 14 rays. Anal rays 11 to 15.
Caudal long, pointed. Pectoral
without free silk like rays.
Ventrals united, oblong.

1668

Oxyurichthys amabilis Seale

Oxyurichthys amabilis Seale, Philippine
Journ. Sci., vol. 9, pt. 1, p. 76, pl. 2, fig. 1,
1914 (type locality, Hong Kong). —
Fowler, Hong Kong Naturalist, vol. 2,
no. 4, p. 310, Nov. 1931 (Hong Kong).

Oxyurichthys amabilis Herre, Gobies of
Philippines, p. 250, 1927 (types). —
Reeves, Journ. Pan-Pac. Res. Inst.,
vol. 2, no. 3, p. 13, July - Sep. 1927
(reference).

Oxyurichthys amabilis Chu, Biol. Bull.
St. John's Univ., no. 1, p. 163, Jan. 1931
(reference).

? Oxyurichthys samu Tomiyama, Jap. Journ.
Zool., vol. 7, no. 1, p. 78, fig. 29, 1936 (type
locality, Sidmura, Sidmoka - Sen).

1669

Depth 6; head 4, width about 2. Snout 3 in head from snout tip; eye 4, $1\frac{1}{3}$ in snout, inner edges very close together; maxillary reaches $\frac{1}{3}$ in eye, length $2\frac{1}{3}$ in head from snout tip; mouth cleft low, little oblique, mandible protruding; upper teeth uniserial, moderate, stout, somewhat curved; lower teeth biserial, very small, ^{tongue rounded;} inter-orbital linear.

Scales 50 in lateral series; 21 transversely; 24 predorsal forward nearly to eyes. Head and prepectoral region naked, except very small predorsal scales, small scales also on trunk and become large on tail posteriorly.

D. VI, 13, first spine $1\frac{1}{4}$ in total head length, first ray $1\frac{1}{4}$; A. 14, first ray $2\frac{1}{10}$, twelfth ray $1\frac{3}{4}$; caudal $3\frac{1}{4}$

in rest of fish; least depth ¹⁶⁷⁰ of
caudal peduncle $2\frac{3}{5}$ in total
head length; pectoral 1, rays
22; ventral rays I, 5, fin
 $1\frac{1}{5}$ in total head length.
Anal papilla small, flat, triangular
Very light brown, white
on chin and thorax. Fins
with slight grayish wash.
Anal blackish.
Length 130 mm. (Seale, Herre.)
China, Japan?

Oxyurichthys anchenolepis Bleeker

Oxyurichthys anchenolepis Bleeker,
 Verslag. Kon. Akad. Wet. Amsterdam,
 ser. 20, vol. 9, p. 138, 1876 (type locality,
 Singapore). — Fowler, ^{fish} Cat. Malaya,
~~Fishes~~ p. 219, 1937 (reference).

Gobius (Oxyurichthys) anchenolepis
Weber, Siboga Exped., vol. 57, Fische,
 p. 476, 1913 (note).

Oxyurichthys amabilis Seale

Oxyurichthys amabilis Seale, Philippine
Journ. Sci., vol. 9, p. 76, pl. 2, fig. 1, 1914
(type locality, Hong Kong). — Herre,
Gobies of Philippines, p. 250, 1927
(types). — Reeves, Journ. Pan-Pac.
Res. Inst., vol. 2, no. 3, p. 13, July-Sep.
1927 (reference).

Oxyurichthys amabilis Chu, Biol. Bull.
St. John's Univ., no. 1, p. 163, Jan. 1931
(reference).

? Oxyurichthys saru Tomiyama, Jap. Journ.
Zool., vol. 7, no. 1, p. 78, 1936 (Sidura,
Siduoka-ben). fig. 29

Depth $5\frac{1}{2}$; head $4\frac{1}{3}$, width 2.
Snout obtuse, convex, scarcely shorter than eye; eye 4 in head, greatly exceeds interorbital; maxillary reaches $\frac{1}{2}$ in eye; mouth cleft oblique, lips slender; upper teeth curved, subequal, 20 each side; lower teeth triserial, inner series not enlarged; tongue rounded; interorbital $\frac{1}{3}$ of eye, without filament above.

Scales 70 in lateral series; 20 transversely between second dorsal and anal; 18 predorsal forward to eyes. Sides of head scaleless. Scales on predorsal, breast and trunk cycloid, posteriorly or on tail ctenoid, where larger.

D. VI, I, 12 or 13, fin sub-continuous basally, longest spines second and third which lower than body, and rays also similar; A. I, 13 or 14, like second dorsal;

1673

caudal longer than head; pectoral rays 19 or 20, acute, rounded, not or scarcely shorter than head; ventral similar, rays I, 5. Anal papilla short, obtuse.

Color of body? Iris rose?
Length 95 to 99 mm. without caudal. (Bleeker.)

Malaya). Bleeker's two specimens were discolored and with broken caudals. He says the species is distinguished from Q. papuensis by the frontal scalation. In common with Q. papuensis and the remaining species with naked predorsal, the inner row of mandibular teeth are not longer than the others and not curved (as in Q. microlepis, tentacularis, ophthalmoneura and belosso), but differ finally from Q. papuensis in the pharyngeal

dentition, where posteriorly the ¹⁶⁷⁴
teeth are molar and rounded.

1675

Oxyurichthys cornutus Mc Culloch
and Waite

Oxyurichthys cornutus Mc Culloch
and Waite, Rec. South Austral. Mus.,
vol. 1, no. 1, p. 80, pl. 8, fig. 2, 1918
(type locality, Carins, Queensland).

— Mc Culloch and Ogilby, Rec.
Austral. Mus., vol. 12, no. 10, p. 257,
July 14, 1919 (reference); — Mc Culloch,
Austral. Mus. Mem., no. 5, pt. 3, p. 378,
Nov. 28, 1929 (reference)

— Mc Culloch and Whitley, Mem. Queensland
Mus., vol. 8, pt. 2, p. 172, July 7, 1925
(reference).

1676
Depth $4 \frac{3}{5}$; head $3 \frac{4}{5}$. Snout
3 in head; eye $4 \frac{3}{5}$, $1 \frac{1}{2}$ in ^{from snout tip} snout,
greatly exceeds eye; maxillary
reaches $\frac{2}{3}$ in eye, length 2 in
head from snout tip; mouth low,
little inclined from horizontal,
mandible slightly protruded
in front; upper teeth cardiform,
subequal, uniserial and lower
teeth in narrow band, inner row
somewhat enlarged, others velleiform;
no distinct canines; tongue obtusely
pointed; interorbital width $2 \frac{3}{5}$
in eye, each of which with stout
tentacle $1 \frac{1}{4}$ in eye.

Scales 51 in lateral series;
16 transversely; on predorsal extend
forward each side above opercles,
head otherwise naked. Prepectoral
region naked. Scales on body
ctenoid, ^{and} little larger posteriorly.
cycloid on trunk and anteriorly.

1677

Low median cutaneous ridge begins over preopercle and extends to first dorsal spine. Several lines of fine papillae on cheeks, intersected with 2 horizontal parallel lines; postocular line back to suprascapula; vertical and 2 inclined lines on opercle.

D. VI, I, 12, third spine longest or $2\frac{4}{5}$ in fish without caudal, second dorsal height $1\frac{1}{3}$ in total head length; A. 14, fin height $1\frac{2}{5}$; caudal 3 in rest of fish, elongately lanceolate; least depth of caudal peduncle $2\frac{1}{4}$ in total head length; pectoral $3\frac{1}{2}$ in fish without caudal, rays 22; ventral rays I, 5, fin $1\frac{1}{10}$ in total head length. Anal papilla $\frac{2}{5}$ of age.

In alcohol yellowish, with dusky blotches along sides and back. Each scale of back with

dark round spot near margin.
 Head and nape with some
 symmetrical markings, most
 distinct of which black patch
 under eye and another on opercle.
 First dorsal with horizontal
 rows of dark-edged ocelli
 between spines. Second dorsal
 with numerous double rows of
 inter-radial blackish spots.
 Elongated dark spots between rays
 of upper half of caudal. Numerous
 small dark inter-radial spots
 on pectoral. Gular membrane dusky.

Length: 35 mm. (incl. caudal
 and tail.)

South American. Said to
 differ from Oxyurichthys cristatus
 in its largely ctenoid scales,
 "instead of wholly cycloid."
 Differs from O. tentaculares and
O. microlepis in the combination
 of the nuchal ridge, ocular
 tentacles, scales and coloration.

Axyurichthys microlepis (Bleeker)¹⁶⁷⁹

Gobius microlepis Bleeker, Verh. Batavia.
Genoot. (Blenn. Gob.), vol. 22, p. 35, 1849
(type locality, Madura Straits near
Surabaya and Sumanap) — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 49, 1861
(Pinang).

; (Madura) vol. 22, p. 5, 1849 (Kammal and
Sumanap); Nat. Tijds. Ned. Indie, vol. 7,
p. 436, 1854 (Batavia).

— Karoli, Termesz. Füzetek, Budapest,
vol. 5, p. 165, 1881 (1882) (Kobe).

— Day, Fishes of India, Suppl.,
p. 793, 1888 (reference); Fauna of
British India, Fishes, vol. 2, p. 263,
1889.

1680

Oxyurichthys microlepis Bleeker, Nat.
Tijds. Ned. Indie, vol. 16, p. 408, 1858
(Japan, Java); Act. Soc. Sci. Ind.
Nedl., ~~no. 6~~, vol. 6, p. 120, 1859 (reference);
Verslag. Kon. Akad. Wet. Amsterdam,
vol. 12, p. 32, 1861 (Singapore). —
Herre, Gobies of Philippines, p. 251,
pl. 20, fig. 2, 1927 (Agno R.; Abando;
Malabon; Manila Bay; Estancia;
Pontevedra; Capiiz; Iloilo; Dumangas;
Molo; Zambraga; Cavallan; Hong Kong).
— Reeves, Journ. Pan-Pac. Res.
Inst., vol. 2, no. 3, p. 12, July-Sep.
1927 (reference). — Chu, Biol. Bull.
St. John's Univ., no. 1, p. 163, Jan. 1931
(reference). — Herre, Fishes Herre
1931 Philippine Exped., p. 91, 1934 (Cavinao;
Bulacan; Manila; Pasay). —
Tomiyama, Jap. Journ. Zool., vol. 7, no. 1,
p. 79, 1936 (Koti; Manila). — Roxas
and Martin, Depart. Agric. Comm.
Manila, p. 228, 1937 (reference).
— Swatti, Index Fish. Viam, p. 153, 1936 (Chanthaburi
Estuary, Laem Sing).

1681

Axyurichthys microlepis Fowler, Cat.
Malay. Fish., p. 219, 1937 (reference).

Gobiichthys microlepis Jordan and
Seale, Proc. U. S. Nat. Mus., vol. 29,
p. 528, 1905 (Hong Kong).

Gobius acutipinnis (not Valenciennes)
Cantor, Journ. Asiatic. Soc. Bengal,
vol. 18, pt. 2, p. 1166, 1849 (1850) (Penang).

Ectenogobius cristatus Day, Proc. Zool.
Soc. London, p. 109, 1873 (type locality,
Bombay; Madras).
— Fowler and Bean, Proc. U. S. Nat. Mus., vol. 71,
art. 10, p. 11, 1927 (Benchoelen, Sumatra; Batavia, Java).
Gobius cristatus Day, Fishes of India,
pt. 2, p. 291, pl. 62, fig. 8, 1876; Fauna
British India, Fishes, vol. 2, p. 260,
1889.

Oxyurichthys cristatus Seale, Philippine
Journ. Sci., vol. 9, pt. 1, p. 75, 1914
(Hong Kong). — Jordan and Seale,
Bull. Bur. Fisher., vol. 26, p. 44, 1906
(Iloilo). — Evermann and Seale,
Bull. Bur. Fisher., vol. 26, p. 104 (San
Fabian). — Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, p. 278, 1908
(Cagayancillo); Philippine Journ.
Sci., p. 50, 1910 (reference). — Seale,
Philippine Journ. Sci., ser. 5, vol. 4, p.
285, 1910 (Sandakan, Borneo); vol. 9,
p. 75, 1914 (Hong Kong). — Reeves,
Journ. Pan-Pac. Res. Inst., vol.
2, no. 3, p. 13, July-Sep. 1927
(reference). — Chu, Biol. Bull. St.
John's Univ., no. 1, p. 163, Jan. 1931
(reference).

Depth $5\frac{2}{5}$ to 6; head 4 to $4\frac{1}{4}$, width $1\frac{1}{2}$ to $1\frac{3}{5}$. Snout $2\frac{3}{4}$ to $3\frac{1}{5}$ in head from snout tip; eye $3\frac{7}{8}$ to $4\frac{3}{4}$, $1\frac{1}{8}$ to $1\frac{3}{4}$ in snout, greatly exceeds interorbital; maxillary reaches $\frac{1}{2}$ in eye, length 2 in head from snout tip; 36 to

40 well spaced moderate conic teeth in upper jaw, lower teeth biserial, much smaller; interorbital low, very narrow or $\frac{1}{3}$ or less of eye, which enters upper profile of head.

Mouth cleft little inclined from horizontal, low, lower jaw protruded in front;

Scales 49 or 50 in lateral series; 15 or 16 transversely; 17 or 18 predorsal forward far as hind end of pleopercle. Median low cutaneous ridge before dorsal separating scaly predorsal region. Head scaleless, also

1684

prepectoral region and breast.

On cheek 2 horizontal and several vertical lines of very minute papillae. Scales on trunk and predorsal region small, gradually larger on tail, especially so posteriorly.

D. VI - I, 12, spines all ending in slender filaments and usually graduated down shorter from first which may reach $3/4$ in combined head and body without caudal, second dorsal height $1/5$ to $1/4$ in total head length; A. I, 13, fin height $1/3$ to $2/3$; caudal 2 to $2 3/5$ in rest of fish; least depth of caudal peduncle $2 1/3$ to $2 1/2$; pectoral 1 to $1 1/5$, rays 15; ventral rays I, 5, fin 1 to $1 1/8$ times total head length. Anal papilla conic, pointed, long as eye.

1695

Brown above with 5 obscure
or obsolete, irregular darker
cross bands or blotches.
Dark blotch below eye. Usually
a dark to blackish spot on
each scale of back. An eye
above, inside edge, rounded
blackish spot. Dorsals and
caudal with black spots, on
or forming transverse series.
Other fins more or less dark
terminally.

India, Malaya, East Indies,
Siam, Philippines, China, Japan.
Heere says of Gobius cristatus
Day "this species differs in
color, in having no ocellus on
the pectoral [base at origin
of fin] or the soft dorsal
[last rays basally], and in
scalation. The probabilities are
great that G. cristatus is no
more than a variety of G. microlepis."

Cyprina

1686

U. S. N. M., no. 56403. Hong Kong,
China. P. L. Young. Length 120 to
124 mm. Three examples.

Oxyurichthys nuchalis (Barnard)

Gobius (Oxyurichthys) nuchalis
Barnard, Ann. South African Mus.,
 vol. 21, p. 824, Oct. 1927 (type locality,
 Zululana coast, 36 to 42 fathoms).

Depth 5 to $5\frac{1}{2}$; head $3\frac{2}{3}$ to $3\frac{3}{4}$,
 rather higher than broad.
 Snout blunt, profile abruptly
 descending; eye $3\frac{1}{2}$ (young) to
 4 in head, 1 to $1\frac{1}{3}$ in snout,
 greatly exceeds interorbital
 width; maxillary reaches $\frac{2}{3}$
 or opposite hind edge of eye;
 mouth cleft nearly horizontal,
 upper jaw slightly overlapping
 lower; teeth conic, in single
 row in both jaws, but with 2
 or 3 behind front row at symphysis.

of lower jaw; no canines; interorbital 3 or 4 in eye; no tentacles; hind rim of orbit prominent, with transverse groove posterior. Lower gill rakers 6.

Scales 50 in lateral series (no complete series remains on any specimen); 12 transversely. A low longitudinal crest from occiput to first dorsal. Scales extending on to temporal region nearly to hind eye edge, leaving base of nuchal crest bare. Scales ctenoid, except those on temporal region. Series of papillae on preorbital, postorbital, occipital, cheeks, preopercle, and opercle, a series round preopercle edge continued on to lower surface of mandible. No flaps on shoulder girdle.

D. VI, I, 12 or 13, contiguous or almost so; A. I, 13; caudal

lanceolate, longer than head, ¹⁶⁸⁹
pectoral rays 22, upper not
silk-like; ventrals reach vent,
margin of basal membrane
fimbriate.

Color as preserved pinkish
brown. Eyes black. Dorsals,
caudal and pectoral hyaline,
but with indications of spots
on second dorsal and of a
dark spot on hind part of
first dorsal. Anal and
ventrals dusky.

Length 110 mm. (Barnard.)

Zululand coast, in 36 to 42
fathoms. Differs from Oxyurich-
thys tentaculares in the absence
of the supraorbital tentacle.

Oxyurichthys signatus (Peters)¹⁶⁹⁰

Gobius signatus Peters, Archiv Naturg.
Wiegman, p. 253, 1855 (type locality,
Mozambique). — Giünther, Cat. Fish.
Brit. Mus., vol. 3, p. 45, 1861
(copied). — Sauvage, Hist. Nat.
Madagascar, Poiss., p. 362, pl. 38,
fig. 4, 1891 (Madagascar).
— Jatzow and Lenz, Abhandl. Senckenb.
Gesell., vol. 21, p. 508, 1898 (Zanzibar).

Gobius (Oxyurichthys) signatus
Barnard, Ann. South African Mus.,
vol. 21, pt. 2, p. 825, Oct. 1927
(Mozambique).

1691

Depth 5; head $3\frac{3}{5}$. Snout
4 in head from snout tip; eye
 $3\frac{3}{4}$, greater than snout or
interorbital; maxillary reaches
 $\frac{1}{4}$ in eye, length $2\frac{1}{4}$ in head
from snout tip; mouth oblique,
begins in front of opposite ^{and} level
with lower eye edge, lower
jaw protruding; teeth with
outer series enlarged; interorbital
2 in eye, eye entering upper profile
of head.

Scales 30 in lateral series;
8 or 9 transverse. Head naked,
also prepectoral region and
breast. Line of mucous pores
along upper jaw, giving off
series along eye, and 2 others
parallel between, transverse
to preopercle; third line delimits
lower jaw; opercle with several
lines of pores.

D. VI, I, 10, second spine $1\frac{3}{4}$

in total head length, first ray ¹⁶⁹²
2, sixth ray $1\frac{1}{4}$; A. I, 10,
sixth ray $1\frac{1}{3}$; caudal subequal
with head, rounded behind;
least depth of caudal peduncle
 $2\frac{7}{8}$ in total head length;
pectoral 1, rays 14; ventral
 $1\frac{1}{3}$ in total head length.

Length 72 mm. (Dauvage.)

Zanzibar, Mozambique,
Madagascar. According to
Peters the coloration greenish,
marked with irregular
blackish brown blotches. Head
with blue spots. Large black
blotch on first dorsal between
fifth and sixth spines. Anal
with whitish spots, indistinct
basally. Paired fins white
spotted, ventrals blackish
terminally.

1693

Oxyurichthys oculo-miris Herre

Oxyurichthys oculo-miris Herre,
Gobies of Philippines, p. 256, 1927
(type locality, Cebu; Davao, Mindanao;
25 m. near San Nicolas lighthouse,
Manila Bay; Calape, Bohol); Fishes
Herre 1931 Philippine Exped., p. 91, 1934
(Cebu). — Roxas and Martin, Depart.
Agric. Comm. Manila, Techn. Bull.
61, p. 228, 1937 (reference).

Depth $5\frac{1}{10}$ to 6; head $3\frac{4}{5}$ to
 $4\frac{1}{10}$, deeper than wide. Snout
3 to $3\frac{4}{5}$ in head; eye $3\frac{9}{10}$ to $4\frac{2}{5}$,
subequal with snout, posterior
half of upper part with sclerotic
coat forming low fold ending in
teat-like projection; mouth
well oblique, reaches below pupil;
lower jaw projecting; 44 to 48
rather wide spaced, fixed, pointed

1694

slightly curved upper teeth, extend back to extreme angle of mouth; lower teeth biserial, smaller, more closely set, also extend back to hind angle of mouth.

Scales 72 to 76 in lateral series; 24 transversely; 17 to 20 predorsal scales. Nuchal crest, postocular, opercles, preopercles and pectoral base scaleless. Snout, preopercle and postocular marked by furrows. Scales on trunk irregular, posterior largest, smallest on nape, and naked nuchal portion surmounted by very low shining fold.

D. VII, I, 12, Tips of spines threadlike, longest equal body depth, fins contiguous; A. I, 13, like second dorsal, hind rays reach beyond caudal when depressed; caudal very long, pointed, $2\frac{1}{10}$ to $2\frac{1}{2}$ in crest of fish; least depth of caudal

1695

peduncle $2 \frac{1}{5}$ to $2 \frac{3}{10}$ in head;
pectoral large, broad, reaches
above second anal ray; ventral
ray reach short, conic, pointed
anal papilla.

In alcohol dusky gray above,
with more or less yellowish
cast, lighter below and belly
white. Eight more or less
distinct dusky cross-bands,
extend from dorsal base to
belly or anal. Broad dusky
band, mostly ill defined, along
side to farther end of caudal
peduncle, ends in large transverse
blackish blotch. Opercle with
irregular pearly spots and
blotches, and has wide dark
band diagonally downward and
forward. More or less well defined
large, semicircular, dark brown
blotch on base of pectoral fin.
ocular tentacle white. Below
eye small ill-defined dark patch.

Shining nuchal crest brown. ¹⁶⁹⁶
First dorsal marked by poorly
defined dark cross stripes &
and wider pale bands,
filiform tips black. Soft dorsal
barred by 4 dark crossbands
alternating with lighter. Anal
and ventrals dusky lilac.
Caudal without markings or
with upper half of membrane
dusky, sprinkled with pearly
spots.

Length 76 to 132 mm. (Herre.)
Philippines.

Oxyurichthys papuensis (Valenciennes) ¹⁶⁹⁷

Gobius papuensis Valenciennes, Hist. nat. Poiss., vol. 12, p. (80) 106, 1837 (type locality, New Guinea; Java). — Günther, Cat. Fish. Brit. Mus., vol. 3, p. 49, 1861 (Australia). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 517, 1900 (Hawaii).
Gobius (Oxyurichthys) papuensis Weber, Siboga Exped., vol. 57, Fische, p. 476, 1913 (Saleyer).
Gobiichthys papuensis Jordan and Seale, Proc. U. S. Nat. Mus., vol. 28, p. 796, 1905 (Negros); Bull. Bur. Fisher., vol. 25, p. 407, 1905 (1906) (reference). — Fowler, Bull. Bishop Mus., no. 22, p. 17, 1925 (Guam); Mem. Bishop Mus., vol. 10, p. 415, 1928 (Society Islands; Hawaiian Is.; Kingman Reef; Honolulu; Waikeala); vol. 11, no. 5, p. 363, 1931 (fresh water Palolo Stream, Oahu); vol. 11, no. 6, p. 444, 1934 (reference).

1698

Oxyurichthys papuensis (Valenciennes)

Gobius papuensis Valenciennes, Hist.
Nat. Poiss., vol. 12, p. (80) 106, 1837

(type locality, New Guinea; Java).

Günther, Cat. Fish. Brit. Mus., vol. 3,
p. 49, 1861.

Fowler, Proc. Acad. Nat. Sci. Philadelphia, p. 517,
1900 (Hawaii).

Oxyurichthys papuensis Jordan and Seale,
Proc. U. S. Nat. Mus., vol. 28, p. 796, 1905
(Negros); Bull. Bur.

Oxyurichthys papuensis Jordan and
Richardson, Mem. Carnegie Mus., vol.

No. 4, p. 201, ^{Aug. 28} 1909 (Takao, Formosa).

— Herre, Gobies of Philippines, p. 253,

1927 (copied). ^{Herre} Journ. Pan-Pac. Res.
— McCulloch, Austral. Mus. (Zool.), no. 5, pt. 3, p. 378, Nov. 18, 1929 (reference).

— Komman, vol. 8, no. 4, p. 1933 (Munaguete)
Zool. Meded. Rijks Mus. Nat. Hist. Leiden, p. 128, 1935 (type; description).

— Roxas and Martin, Depart. Agric.

Comm. Manila, Tech. Bull. 6, p. 229,

1937 (reference).

— Taniyama, Jap. Journ. Zool., vol. 7, no.
1, p. 79, 1936 (Zolo).

— McCulloch and Ogilby, Rec. Austral. Mus., vol.
12, no. 10, p. 257, July 14, 1919 (reference).

1699

Oxyurichthys papuensis Jordan and
Richardson, Philippine Journ. Sci.,
7.50, 1910 (reference).

Gobionellus papuensis Fowler, Copeia,
no. 112, p. 84, Nov. 20, 1922 (Hawaii).

~~Oxyurichthys belosso~~ ~~Bleeker~~

1700

Gobius belosso Bleeker, Nat. Tijds. Ned.
Indie, vol. 7, p. (313) 316, 1854 (type
locality, Tjiringin, Bantam
Province, Java; in rivers); vol. 12,
p. 215, 1855 (Nias). — Günther, Cat.
Fish. Brit. Mus., vol. 3, p. 50, 1861 (copied).

Oxyurichthys belosso Bleeker, Nat. Tijds.
Ned. Indie, vol. 20, pp. 216, 450, 1859-60
(Singapore).

Oxyurichthys belosso Fowler, ^{List Fish.} Cat. Malaya,
~~Fish.~~, p. 219, 1937 (reference).

Gobius ophthalmotaenia Bleeker,

Nat. Tijds. Ned. Indie, vol. 6, p. 518,
1854 (type locality, Kokos Island,
Indian Ocean); vol. 7, p. (38) 46,
1854 (Kokos Island); vol. 8, p. 446,
1855 (Kokos Island); Act. Soc. Sci.
Ind. Neerl., vol. 1, no. 3, p. 5, 1856
(~~Guamther~~, Cat. Fish. Brit. Mus., vol. 3, p. 37, 1861 (China & East
Manado). — Schmeltz, Cat. Mus.

Godeffroy, no. 8, p. 6, 1881 (Ponape);
no. 9, p. 33, 1884 (Ponape). — Meyer, An.
— Martens, Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876
(Kagasaki). — Loc. Espan. Hist. Nat. Madrid, vol. 14, p.
29, 1885 (Cebu).

Centrogobius ophthalmotaenia Streets,

Bull. U. S. Nat. Mus., no. 7, p. 60, 1877
(coral reefs at Oahu).

1702

Gobius^{us}~~us~~ petersenii Steindachner,
Sitzs. Ber. Akad. Wiss. Wien, vol. 102,
pt. 1, p. 234, ~~1893~~ 1893 (type locality,
Swatow, China). — Rutter, Proc.
Acad. Nat. Sci. Philadelphia, p.
89, 1897 (reference). — Rendahl,
Arkiv för Zool. Stockholm, vol. 16,
no. 2, p. 20, 1924 (China). — Chu,
Biol. Bull. St. John's Univ., no. 1,
p. 161, Jan. 1931 (reference).

Gobionellus lanchotus Jenkins, Bull.
U. S. Fish Comm., vol. 22, p. 503, fig. 44,
1902 (1903) (type locality, Honolulu).

1703

Gobrichthys lanchotus Jordan and
Evermann, Bull. U. S. Fish Comm., vol.
23, pt. 1, p. 485, fig. 213, 1903 (1905)
(Hilo; Honolulu; Waikiki). —
Jordan and Seale, Bull. Bur.
Fishes, vol. 25, p. 407, 1905 (1906)
(reference). — Ginsburg, Bull.
Bishop Mus., no. 107, p. 20, 1933
(Pearl and Hermes Reef).

Oxyurichthys lanchotus Jordan and
Snyder, Bull. Bur. Fisher., vol. 26,
p. 218, 1906 (1907) (Honolulu). —
Jordan and Jordan, Mem. Carnegie
Mus., vol. 10, no. 1, p. 78, Dec. 1922
(Hawaii).

Gobius (Oxyurichthys) notonema
Weber, Notes Leyden Mus., vol. 31,
p. 154, 1909 (Type locality: Menado,
Celebes); Siboga Exped., vol. 57,
Fishes, p. 477, fig. 96, 1913 (type).

Depth $4 \frac{1}{8}$ to $5 \frac{2}{3}$; head $3 \frac{2}{5}$ to 4, width 2 to $2 \frac{1}{8}$. Snout 1704
 $3 \frac{1}{8}$ to $3 \frac{1}{2}$ in head from snout tip; eye $4 \frac{3}{4}$ to 5, $1 \frac{1}{4}$ to $1 \frac{1}{3}$ in snout
2 to 3 times interorbital width; maxillary reaches $\frac{3}{4}$ in eye, length 2 in
head from snout tip; teeth moderate, conic, uniserial above, variably biserial
or triserial teeth in front of jaw; lower teeth triserial anteriorly, varia-
bly quadriserial and become biserial laterally; tongue convex in front; inter-
orbital narrowly concave. Gill rakers 24-8, lanceolate, half length of gill
filaments, which $1 \frac{7}{8}$ in eye.

Scales 65 to 81+ in median lateral series; 16 to 22 transversely;
25 predorsal. Row of fine papillae down from front eye edge vertically toward
maxillary medially and horizontal branch forward along preorbital; row along
and close below lower eye edge, with branch downward from antero-inferior eye
edge and with 2 shorter from postero-inferior eye edge; 2 horizontal lines
also extend across cheek which may be more or less connected by 1 or 2 inter-
extensions; line over and along front opercle edge, bar above horizontal and
another below obliquely; short line above behind hind nostril; vertical bar
and 2 horizontal from behind eye; postocular line also extending to suprascap-
ula. Scales with 24 to 29 close set radiating basal striae; apical denticles
23 to 25; circuli fine.

D. VI—I, 12, 1, first spine 1 to $1 \frac{2}{5}$ in total head length,

twelfth ray $1 \frac{2}{5}$; A. I, 13, i, twelfth ray $1 \frac{2}{5}$ to $1 \frac{2}{3}$; least depth of caudal peduncle $2 \frac{3}{5}$ to $3 \frac{1}{8}$; ventral 1 to $1 \frac{1}{10}$; caudal $1 \frac{3}{4}$ to $2 \frac{1}{4}$ in rest of fish, ends in long point behind; pectoral 3 to $3 \frac{1}{5}$.

Brown, little paler on under surface of head and abdomen. Side with 6 large dark blotches. Along lower part of side several smaller alternate blotches, also one opposite each of large median lateral blotches. Dorsal deeper brown, each fin with several longitudinal deep or dusky bands. Caudal with similar, more numerous, though paler and transverse bands. Pectoral brownish, faintly with crossbands. Ventral with median rays blackish, otherwise brownish.

Cocos Keeling Islands, Malaya,
East Indies, Philippines, China,
Formosa, Japan, Micronesia, Hawaii.

U. S. N. M., no. 52018. Negros,
Philippines. Dr. Bashford Dean.
Length 75 mm. As Gobioichthys
papuensis.

1707

Oxyurichthys longimanus (Weber)

Gobius (Oxyurichthys) longimanus Weber,
Notes Leyden Mus., vol. 31, p. 154, 1909
(type locality, Ceram Sea); Siboga
Exped., vol. 5 ^{Fische,} p. 478, fig. 97, 1913
(type).

Depth $6 \frac{1}{8}$; head $3 \frac{1}{3}$. Snout
 $7 \frac{3}{4}$ in head from snout tip; eye
3, greatly exceeds snout; max-
illary reaches $\frac{1}{2}$ in eye, length
3 in head from snout tip; mouth
cleft little inclined from
horizontal, front end level with
lower edge of eye; upper teeth
and outer row of lower teeth
enlarged; eye closely approaches
upper profile of head, apparently
not impinging.

Scales 35 in lateral series;
8 transversely. Head, predorsal,

1708

prepectoral and chest naked.
Scales on trunk little smaller
than those on tail posteriorly.

D. VI, 10?, first and second
spines = greatly elongated or
about $2 \frac{2}{5}$? in fish without
caudal, last ray $1 \frac{1}{2}$ in total
head length; A. 13, last ray
2; caudal lanceolate, 2 in
rest of fish; least depth of
caudal peduncle $3 \frac{1}{2}$; pectoral
3 in fish without caudal; ventral
 $1 \frac{1}{3}$.

Sand color, with 4 brown
lateral blotches. Head dark,
with mother of pearl blotches
on cheek, opercle and neck.

Length 26 mm. without caudal.
(Weber.)

East Indies. Said to agree
with Gobius signatus Peters in
scalation.

Oxyurichthys jaarmani Weber 1709

Oxyurichthys jaarmani Weber, Nova Guinea,
vol. 9, pt. 4, p. 601, 1913 (type locality,
Lorentz River).

Oxyurichthys jaarmani Fowler, Mem.
Bishop Mus., vol. 10, p. 415, 1928
(copied).

1710

Depth $5\frac{1}{3}$; head $3\frac{1}{2}$, ~~wider~~
~~than deep~~ deeper than broad.
Eye $2\frac{4}{5}$ in head, in first half
off head, longer than snout; mouth
cleft nearly horizontal, reaches
front pupil edge; upper, and
outer lower teeth enlarged,
curved; interorbital very narrow,
concave.

Scales 30 in lateral series;
7 transversely. Head and predorsal
scaleless. Scales ctenoid, become
smaller and feebly ctenoid
anteriorly on body.

D. VI, 11, first 2 spines
prolonged into filaments; A.
12, last ray, also last dorsal
ray, reach caudal base; caudal
over twice in rest of fish;
pectoral rays 22, longer than
head, somewhat shorter than
ventral.

Brownish yellow, with

1711
suggestion of dark blotches on
caudal base. Hind edges of
scales narrowly blackish.
Vertical fins with dark blotches.

Length 50 mm. (Weber.)

East Indies. Related to
O. longimanus in its large
scales, though with different
coloration.

1712

Oxyurichthys tentacularis (Valenciennes)

Gobius tentacularis Valenciennes, Hist.
Nat. Poiss., vol. 12, p. (96) 128, 1837
(type locality, Java). — Bleeker,
Nat. Tijds. Ned. Indie, vol. 2, p. 434,
1854 (Batavia; Surabaya; Kammal).
— Günther, Cat. Fish. Brit. Mus., vol. 3, p. 48, 1861
(reference copy).

Oxyurichthys tentacularis Jordan and
Seale, Bull. Bur. Fisher., vol. 26, p.
45, 1906 (1907) (Cavite). — Fowler,
Copeia, no. 58, p. 65, June 18, 1918
(Philippines); Proc. Acad. Nat.
Bleeker, Act. Soc. Sci. Ind. Neerl., vol. 3,
no. 9, p. 2, 1857-58 (Padang, Sumatra);
(Acht. Sumatra) vol. 8, p. 42, Feb.-Aug. 1859 (reference). —

Sci. Philadelphia, vol. 79, p. 291, 1927
(Santa Maria; San Fernando; Orani;
Orion; Philippines); Journ. Bombay
Nat. Hist., vol. 33, no. 1, p. 118,
Sep. 30, 1928 (Bombay). — Tomiyama,
Jap. Journ. Zool., vol. 7, no. 1, p. 79, 1936
(Yansui R., Formosa).
— Komura, Zool. Med. Rijksmus. Nat. Hist. Leiden, p. 126, 1935 (discussion).

1713

Gobiichthys tentacularis Jordan and
Richardson, Bull. Bur. Fisher., vol.
27, p. 278, 1907 (1908) (Iloilo; Aparri);
Philippine Journ. Sci., p. 50, 1910
(reference).

Gobius erythrinus (Kuhl and Van Hasselt) Valenciennes,
Hist. Nat. Poiss., vol. 12, p. () 128, 1837.

Gobius macrurus Bleeker, Verh. Batavia.
Genoot. (Blenn. Gob.), vol. 22, p. 35,
1849 (type locality, Batavia; Surabaya;
(Madura), vol. 22, p. 5, 1849 (Kammal).

Gobius ophthalmonema Bleeker, Nat.
 Tijds. Ned. Indië, vol. 12, p. ⁽¹⁹³⁾ 208, 1856
(type locality, Ternate). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 48,
1861 (copied). ~~Meyer, Ann.
Sci. Espar. Hist. Nat. Madras, vol.
14, p. 29, 1885.~~

~~Ectenogobius ophthalmonemus Günther,
Journ. Mus. Godeffroy, vol. , pt. ,
p. 180, pl. 11, fig. B, 1873 (Tonga;
Fiji; Labuan).~~

Oxyurichthys ophthalmonema Bleeker,
 Act. Soc. Sci. Ind. Neerl., vol. 6, ~~1858~~,
 p. 120, 1859 (reference).
 — Herre, Gobies of Philippines, p. 257,
 pl. 20, fig. 3, 1927 (Vigan; Agno R.;
 Malabon; Pasig R.; Tondo; Cavite;
 Balayan Bay; San Jose; Pontevedra;
 Iloilo; Molo; Villa; Dumangas;
 Zamboanga; Zamboanga; Cebu; Davao;
 Hong Kong); Fishes Herre 1931
 Philippines Exped., p. 91, 1934 (Bauang
 Sur; Manila; Cebu; Antique
 Province; Cebu; Dumaguete; Jolo). —
Roxas and Marten, Depart. Agric.
~~Oxyurichthys~~ Comm. Manila, Tech.
 Bull. 6, p. 228, 1937 (reference).

Oxyurichthys ophthalmonema Fowler,
 Proc. Acad. Nat. Sci. Philadelphia,
 vol. 86, p. 84, 1934 (Den Pasar, Bali).

1715

Ectenogobius ophthalmonema Günther,
Journ. Mus. Godeffroy, vol. 6, pt. 11,
p. 180, pl. III, fig. 13, 1877 (Vociety
Islands; Fiji; Akyab); Rep. Voy.
Challenger, vol. 1, p. 135, 1880
(Kandavu, Fiji).

Pselaphias ophthalmonemus Jordan
and Seale, Bull. Bur. Fisher., vol.
25, p. 406, 1905 (1906) (Vaisigano River,
Apia, Samoa).

Ectenogobius ophthalmonemus Fowler,
Mem. Bishop Mus., vol. 10, p. 415, 1928
(Apia); Proc. Acad. Nat. Sci. Philadelphia,
vol. 81, p. 615, 1929 (Hong Kong).

Ayurichthys viridis Herre, Gobies of
Philippines, p. 260, 1927 (type locality,
Manila; Nawalas; Capi); Fisher
Herre 1931 Philippine Exped., p. 91, 1934
(Capi). — Roxas and Manton, Depart.
Agric. Comm. Manila, Techn. Bull. 6,
p. 229, 1937 (reference).

Gobius wronema Weber, Notes Leyden
Mus., vol. 31, p. 153, 1909 (type locality,
Bai von Bima); Siboga Exped.,
vol. 57, Fische, p. 477, fig. 95, 1913
(type).

Gobius (Oxyurichthys) wronema Weber,

length $1\frac{1}{6}$ in total head length.

In alcohol brownish yellow. Three or 4 obscure dark lateral blotches. First dorsal with 5 parallel darker horizontal bands, and same number narrower on second dorsal. Caudal dark terminally and rounded dark basal blotch size of eye. Anal dark marginally. Pectoral with narrow transverse dark basal streaks, and round dark spot on upper prepectoral region.

Length 78 mm. without caudal. (Weber.)

East Indies.

1717

Depth $4\frac{1}{2}$ to $5\frac{1}{5}$; head $3\frac{1}{2}$ to 4,
width $1\frac{1}{2}$ to $1\frac{3}{5}$. Snout 3 to
 $3\frac{1}{8}$ in head; eye 4 to $4\frac{2}{5}$, $1\frac{1}{8}$
to $1\frac{1}{3}$ in snout, greatly exceeds
interorbital; maxillary reaches
 $\frac{1}{2}$ to $\frac{2}{3}$ in eye, length 2 in
head; mouth cleft but moderately
inclined, begins in front well
below lower edge of eye, jaws
subequal; upper teeth uniserial,
48 to 50; lower in 3 or 4 rows
with inner or both outer and
inner rows enlarged; interorbital
very narrow, 3 to $3\frac{1}{3}$ in eye,
last entering upper profile;
also with suproocular tentacle
1 to $1\frac{1}{2}$ in eye.

Scales 54 or 55 in lateral
series; 15 or 16 transversely; 22
or 23 predorsal. Head, Tw with
exception of predorsal region,
naked. Low naked cutaneous
median keel before dorsal

1718

forward to occiput. Prepectoral region naked. Several lines of minute papillae radiate down below eye and crossed by 2 parallel horizontal intersecting lines. Scales all smaller on predorsal and trunk, larger on tail, especially posteriorly.

D. VII, I, 12 or 13, ends of spines all more or less elongated and filamentous and first may reach base of last dorsal ray, second dorsal height greatest posteriorly and may equal head length; A. I, 13, fin height $1\frac{1}{10}$ to $1\frac{2}{3}$ in head; caudal $2\frac{1}{5}$ to $2\frac{1}{4}$ in rest of fish, elongately lanceolate; least depth of caudal peduncle $2\frac{1}{5}$ to $2\frac{3}{5}$ in head; pectoral 1 to $1\frac{1}{8}$, rays 15 or 16; ventral rays I, 5, fin $1\frac{1}{8}$ to $1\frac{1}{4}$ in head. Anal papilla half of eye, slender, pointed.

1719

Variably dark or pale brown, with 6 dark transverse saddles on back, alternating along middle of side with 5 rather large dark blotches, usually last at caudal base best marked or darkest. Usually dark brown to blackish blotch or transverse bar below eye on cheek. Dorsals well spotted with blackish, also pectoral and upper half of caudal may be similarly marked. Inclined pale bar on pectoral base with dark blotch above and narrower one below. Anal and ventrals dusky.

India, East Indies, Philippines, China, Formosa, Polynesia.

U. S. N. M., no. 52409. Apia,
Samoa. Bureau of Fisheries.
Length 84 to 128 mm. Two
examples. As Pselaphius oph-
thalmoneuma.

U. S. N. M., no. 72181. Aparisi, Luzon.
R. C. Mc Gregor. Length 90 mm.

U. S. N. M., no. 102496, Iloilo,
Panay, Hawaiian Islands. March
29, 1929. Lieut. H. C. Kellers.
Length 114 to 130 mm. Two
examples.

1723

I have been unable to identify
the following nominal species.
Hereafter observed:

"The . . . highly unsatisfactory
description is all that we know
about this species. It is evidently
an Oxyurichthys, but the description
is remarkable for what it
omits rather than for what it
gives."

1724

Cyprichthys argulus (Peters)

Gobius argulus Peters, Monatsber.
Akad. Wiss. Berlin, p. 263, 1868 (type
locality, Paracale, Luzon).

Cyprichthys argulus Jordan and
Richardson, Philippine Journ. Sci.,
p. 50, 1910 (reference).

Cyprichthys argulus Herre, Gobies of
Philippines, p. 249, 1927 (copied). —
Roxas and Martin, Dep. Agric. Comm.
Manila, Tech. Bull. 6, p. 228, 1937
(reference).

Scales 13 between end of
second dorsal and anal.

1725

D. VI-I, 12; A. I, 12.

One example with first dorsal dark with white longitudinal lines, the second dorsal dark brown with a few white dots and a clear edge, anal black with numerous white dots and a broad white base, dark caudal uniform without clear edge and unspotted. Second example with first dorsal as in first specimen second dorsal with alternate clear and dark, with oblique bands from above anteriorly to below posteriorly, anal colored as in first example, and caudal with numerous transverse black crossbands. Both without blue spots on pectoral base and yellow submarginal band on caudal, usually seen in Gobius.

arabicus.

(Peters.)

Luzon. Peters also says its whole habit, shape of body, dentition, and form-greatly like Gobius arabicus, but unique in coloring of body and head with small blue, black-edged ocelli, and white-dotted ~~pectora~~ paired fins, and the much larger scales.

Genus Parapocryptes Bleeker¹⁷²⁶

Parapocryptes Bleeker, Arch. Néerl.
Sci. Nat. Harlem, vol. 9, p. 327, 1874.
(Type Lipocryptes macrolepis
Bleeker, orthotypic.)

Paeneapocryptes Herre, Gobies of
Philippines, p. 261, 1927 (type
Parapocryptes (Paeneapocryptes)
mindanensis Herre, virtually
monotypic.)

1727

Body very elongate, anteriorly partly cylindrical, posteriorly compressed. Head partly cylindrical. Snout long as eye. Eyes anterior, in front half of head. Mouth little oblique, jaws subequal. Teeth in both jaws uniserial, upper anterior ones canine like, lower teeth pointed and horizontal, canine behind symphysis each side. Upper jaw with notch receiving mandibular tip. Tongue truncate, nearly totally adnate to mouth floor. Nostrils not tubular. Bony interorbital $\frac{1}{2}$ eye diameter. Gill openings about long as width of pectoral fin base, Isthmus broad. Inner edge of shoulder girdle without fleshy flaps. Scales 80 in axial lateral series, deciduous, cycloid. Head naked, or scaled above behind

eyes, laterally scaled from under eye, on preopercle and opercle. Dorsal fins close together, first with 6 spines, second with 13 to 30 rays. Anal rays 14 to 29. Caudal pointed. Pectoral without free rays, base scaled. Ventrals united, oblong, under pectorals.

Parapocryptes henlei (Bleeker) ¹⁷²⁹

Apocryptes henlei Bleeker, Verhand.
Batavia. Genoot. (Blenn. Gob.), vol.
22, p. 37, 1849 (type locality,
Madura Straits near Subabaya
and Kammal); (Madura) vol. 22, p.
5, 1849 (Kammal). — Günther,
Cat. Fish. Brit. Mus., vol. 3, p. 83,
1861 (copied).

1730

Depth 10 to 11, body elongated, anteriorly subcylindrical, posteriorly compressed; head 7 to $7\frac{1}{2}$, obtusely convex, width $1\frac{2}{3}$. Eye 5 in head, at second fifth its length, greater than inter-orbital; mouth cleft extends behind eye; upper teeth with 4 to 6 enlarged anterior ones, curved; lower teeth horizontal, with 2 canines near symphysis.

Scales 70 in lateral series; twice as large between pectoral and caudal.

D. VI - I, 27, first dorsal high as body depth, second dorsal lower; A. I, 28, caudal acute, 3 in rest of fish; pectoral rays 19; ventral rays I, 5; paired fins 9 in total length. Anal papilla conic, acute. Color on head, back and vertical fins green, below

yellowish. Paired fins golden.¹⁷³¹
Length 153 mm. (Bleeker.)
East Indies.

1732

Parapocryptes macrolepis (Bleeker)

Apocryptes macrolepis Bleeker, Nat.
Tyds. Ned. Indië, vol. 2, p. (58, 61) 66,
1851 (type locality, Bandjermassing,
Borneo, in rivers); vol. 3, p. 408,
1852 (Pontianak); vol. 20, pp. 238,
450, 1859-60 (Singapore). - Günther,
Cat. Fish. Brit. Mus., vol. 3, ~~186~~ p. 83,
1861 (copied).

Parapocryptes macrolepis Fowler, Cat.
Malay. Fish., p. 219, 1937 (reference).

1733

Parapocryptes mindanensis (Herre)

Parapocryptes (Paeneapocryptes)
mindanensis Herre, Gobies of
Philippines, p. 62, pl. 20, fig. 4,
1927 (type locality, South coast of
Cotabato Province).

Depth $7 \frac{1}{5}$; head $3 \frac{3}{4}$, width 2.
Snout $3 \frac{4}{5}$ in head from snout
tip; eye $3 \frac{4}{5}$, subequal with
snout, closely set; maxillary
reaches $\frac{1}{2}$ in eye, length 2 in
head from snout tip; mouth
little inclined from horizontal,
low, lower jaw slightly protruded;
upper teeth unequal, some large,
hooked; lower teeth much smaller,
none enlarged, canines behind
symphysis minute; inner edges
off eyes hair's breadth apart,
eyes entering upper profile of head.

Scales 70 in lateral series. ¹⁷³⁴

Head, predorsal, breast and prepectoral region naked.

Scales smaller on trunk and largest posteriorly on tail.

D. VI, I, 12, first spine $3\frac{1}{5}$ in fish without caudal, second dorsal height $1\frac{3}{5}$; A. I, 13, fin height 2; caudal $2\frac{7}{8}$ in rest of fish, elongately lanceolate; least depth of caudal peduncle 3; pectoral $1\frac{2}{5}$, rays 13; ventral rays I, 5, fin $1\frac{1}{4}$ in ^{total} head length.

In alcohol very pale yellowish brown, with series of 4 light brown, elongate spots along middle of side, and large nearly circular spot on caudal base. Base of each dorsal spine and ray with brown spot. First dorsal pale brown, with large, dark brown basal

spot behind sixth spine. ¹⁷³⁵ Second
dorsal very pale brown. Anal
clear with dark brown margin.
Ventrals blackish, outer edges
pale. Other fins clear.

Length 33 mm.

(Herre.)

Philippines.

Genus Apocryptichthys Day

Apocryptichthys Day, Fishes of India, pt. 2, p. 302, 1876. (Type Apocryptes cantoris Day, monotypic.)

Body very elongate, partly cylindrical anteriorly, little compressed posteriorly. Head compressed, elongate. Snout long as eye. Eye small, advanced, at first third of head. Mouth wide, nearly horizontal, lower jaw little prominent. Teeth in both jaws uniserial, obtuse; front upper teeth large canines; lower teeth partly horizontal, no canine behind symphysis? Tongue rounded, nearly entirely adnate to mouth floor. Bony interorbital equals snout. Front nostril in

triangular lobule, overhangs ¹⁷³⁷
upper lip. Gill openings narrow,
placed between pectoral and
ventral bases, isthmus separate.
Scales 70 to 90 in axial lateral
series, small on anterior parts
of body, larger posteriorly. Head
scaled above behind eyes, on
preopercle and opercle. Dorsal
fins continuous? First dorsal
with 6 very weak spines, second
dorsal with 25 to 27 rays.
Anal with 24 to 27 rays. Caudal
oblong, pointed. Pectoral without
free rays. Ventrals united,
oblong, below pectorals.

Resembles Scartelaos but
without free eyelid.

Analysis of Species

a.¹ Depth $6\frac{1}{5}$ to $7\frac{1}{5}$; D. VI,
I, 24 to 26; scales 75 to 80 in
 lateral series, 22 to 24 trans-
 versely. sericus

a.² Depth $7\frac{3}{4}$ to 8; D. VI, I, 27;
 scales 53 or 54 in lateral series,
 15 or 16 transversely. livingstoni

a.³ Depth $8\frac{3}{4}$; D. VI, 27; scales
 90 in lateral series, 17 trans-
 versely. cantorii

Apocryptichthys sericus Herre

Apocryptichthys sericus Herre, Gobies
of Philippines, p. 264, pl. 21, fig. 1,
1927 (type locality, Amoy, China;
Fuchow).

Depth $6\frac{1}{5}$ to $7\frac{1}{5}$; head $3\frac{2}{5}$ to
 $3\frac{2}{3}$, width $1\frac{4}{5}$ to $2\frac{1}{5}$. Snout
 $4\frac{1}{3}$ to $4\frac{3}{5}$ in head; eye 6 to 7,
 $2\frac{3}{5}$ in snout, greatly exceeds
interorbital; maxillary extends
2 eye diameters beyond eye,
length $1\frac{1}{2}$ to $1\frac{7}{10}$ in head;
mouth large, begins below
level of eye, ^{jaws equal} at center front
of upper jaw shallow notch
with 1 or 2 very large curved
canines protruding downward
beyond lower jaw, like miniature
whorled tusks; extending back
from these along edge of jaw-

1740

single row of small teeth; teeth
in lower jaw embedded - on
under outer side, conspicuously
visible when fish is turned over,
and at symphysis hump fitting
into notch in upper jaw; large
angular, pointed, teatlike flap
of skin projects at each forward
angle of snout opposite eye
and hangs down over lower
jaw.

Scales 75 to 85 in lateral
series; 22 to 24 transversely.
Entire body covered with small
cycloid scales, much larger on
tail. Median predorsal region
appears naked, under a lens
very small embedded scales seen;
above preopercles ^{more} prominent and
extend forward to edge of
ocular pits; opercle and pre-
opercle covered with ^{minute} scales to eyes;
snout and region below eyes naked.

1741

D. VI, I, 24 to 26, fifth and sixth spines $3\frac{1}{2}$ to 4 in head, second dorsal height $2\frac{7}{10}$ to $3\frac{1}{2}$; A. I, 23 to 26, like second dorsal but lower; caudal $1\frac{1}{5}$ to $1\frac{3}{4}$ times head, broadly lanceolate; pectoral $1\frac{1}{2}$ to $1\frac{4}{5}$ in head, broadly pointed; ventral subequal with or little shorter than pectoral.

In alcohol dull bluish to brownish, paler beneath. Smallest specimen with 7 or 8 dorsal crossbands posteriorly, last at caudal base, first $\frac{1}{2}$ near middle of length and very vague. Top of head and predorsal marbled with many small, irregular, dark brown spots, blotches and lines. Upper lip blackish brown. Large deep violet-brown or bluish brown blotch on pectoral base,

1742

extends upon rays, rest of fin
dusky to yellowish. An upper
part of elongated posterior
second dorsal rays large
black spot. Membrane of
second dorsal more or less
brown between rays. Caudal
dusky, with pale margin above
and below. Anal and
ventrals yellowish.

Length 51 to 80.5 mm.

(H. evere.)

Amoy, China.

Apocryptichthys livingstoni Fowler¹⁷⁴³

Apocryptichthys livingstoni Fowler,
Proc. Acad. Nat. Sci. Philadelphia,
vol. 87, p. 162, figs. 131-132, 1935
(type locality, Paknam, Siam).

Depth $7\frac{3}{4}$ to 8; head $3\frac{1}{4}$ to $3\frac{1}{2}$,
width $1\frac{3}{5}$ to $1\frac{4}{5}$. Snout $5\frac{1}{2}$ to 6
in head; eye $10\frac{3}{4}$ to 13, orbit
 $7\frac{1}{4}$ to $7\frac{1}{2}$, subequal with snout;
maxillary $1\frac{3}{4}$ to $1\frac{4}{5}$ in head; 2
long protruding upper front
canines long as orbit, followed
by row of 10 short flaring teeth
each side concealed by upper
lip; 11 to 13 long, protruding
teeth flaring out from each
side of lower jaw; posteriorly
lower lip with 7 low-marginal
lobes before vixtus; tongue little
distinct from mouth floor;

1744

flexible preorbital flap extends down over dentition of closed jaws before eye. Gill opening short, little less than orbit, mostly below pectoral base.

Head naked, also chest, breast, paired fin bases and belly little behind ventral bases. Scales cycloid, small and crowded over most of trunk, larger on tail, especially posteriorly and on caudal base. Caudal base scaly. Scales with

About 50 scales in lateral axial series to caudal base and 3 or 4 more on latter; 15 or 16 transversely. 20 to 22 slightly radiating basal striae; Circuli moderate, fewer or obsolete apically.

D. VI, 27, spinous fin height $3\frac{1}{2}$ to 4 in total head length, spines

1745

flexible and joined by broad membrane with rayed fin, height of last $2\frac{3}{4}$ to $3\frac{1}{2}$; A. 25 or 26, fin height 3 to 4; caudal $1\frac{1}{4}$ to $1\frac{1}{2}$, ends in median point behind; caudal peduncle depth $3\frac{1}{3}$ to 4; pectoral $1\frac{3}{5}$ to $1\frac{3}{4}$, rays 20; ventral rays I, 5, fin $1\frac{3}{5}$ to $1\frac{4}{5}$ in head.

Largely gray, little lighter on under surfaces. Upper lip blackish, also end of suborbital flap. Iris gray. Lower lip quite pale or light drab. Top of head and predorsal region obscurely speckled with darker. Dorsals and caudal largely dark gray on membranes. Anal whitish, also ventrals. Pectorals with dark gray bases, fins dull brownish above, whitish below.

Siam.

A. N. S. P., no. 63091. Paknam,
Siam. August 28, 1934. Length
94 mm. Type.

A. N. S. P., no. 63092 and 63093.
Same data as preceding, paratypes.
Length 93 and 94 mm.

U. S. N. M., no. 86378, China.
A. de C. Sowerby. Length 72 to
85. $\overline{D. VI}, \overline{I}, 27$; $\overline{A. 26}$; scales
about $4\overline{8}$ in lateral series.
Two examples.

Apocryptichthys cantoris (Day)

Apocryptes cantoris Day, Proc. Zool. Soc.
London, 1870, p. 693 (Type locality,
Andamans).

Apocryptichthys cantoris Suwatti, Index
Fish. Siam, p. 156, 1936 (Gulf of Siam).
Day, Fishes of India, pt. 2, p. 302,
pl. 62, fig. 7, 1876 (Andamans); Fauna
British India, Fishes, vol. 2, p. 279,
fig. 94, 1889. — Koumans, Zool. Meded.
Rijks. Mus. Nat. Hist. Leiden, deel 15,
af. l. 1-2, p. 16, 1932 (eastern Java;
Soerabaya).
H. M. Smith, Journ. Siam. Soc. Nat. Hist.
Suppl., vol. 8, no. 3, p. 189, 1931 (Mekong).

1749

Depth $8\frac{3}{4}$; head $3\frac{1}{2}$, width $2\frac{1}{2}$. Snout $5\frac{4}{5}$ in head from snout tip; eye 6, subequal with snout, greater than interorbital; maxillary little inclined reaches $1\frac{1}{2}$ eye diameters behind eye, length $1\frac{4}{5}$ in head from snout tip; front of mouth begins level with lower eye edge; mandible little protruded; teeth fixed, curved, elongated, 13 on either side of jaws, 2 central ones on premaxillaries long pointed canines curving downward extend far beyond lips; lower teeth sub-horizontal and curved slightly upwards, their extremities rather enlarged but no posterior canines; no barbels; an angular pendulous flap of skin from preorbital falls to over teeth on side of upper jaw; Gill ~~open~~ interorbital width $\frac{2}{3}$ of eye. Gill opening

rather small, before lower half¹⁷⁵⁰
of pectoral base.

Scales 90 in lateral series;
17 transversely between second
dorsal and anal. Scales cycloid,
much smallest anteriorly on
body. Head scaleless.

D. VI, 27, third spine $3\frac{2}{3}$
in total head length, second
dorsal height $3\frac{1}{2}$; A. 26,
fin height $4\frac{1}{4}$; caudal $1\frac{3}{7}$,
lanceolate; caudal peduncle
depth $4\frac{1}{5}$; pectoral $1\frac{3}{4}$, rays
19; ventral rays I, 5, $1\frac{7}{8}$ in
total head length.

Color grayish olive. First
dorsal dark, longitudinally
banded. Caudal dark, with some
spots on upper half.

Length 80 mm.

(Day.)
Amboina, Gulf of Siam.

Genus Acanthogobius Gill

1751

Acanthogobius Gill, Proc. Acad. Nat.
Sci. Philadelphia, p. 145, 1859 (1860).
(Type Gobius flavimanus Schlegel.)

Synechogobius Gill, op. cit., p. 266, 1863.
(Type Gobius hasta Schlegel.)

Aboma Jordan and Starks, Proc.
Calif. Acad. Sci., ser. 2, vol. 5, p. 497,
1895. (Type Aboma theostoma
Jordan and Starks.)

1752

Body elongate, partly cylindrical anteriorly, little compressed posteriorly. Head rather long. Snout elongate, greater than eye. Eye nearly median in head length. Mouth little inclined, jaws equal. Teeth in several rows in jaws, outer row enlarged, no canines. Tongue truncate. Interorbital narrow, bony area less than half of eye. Gill openings moderate, extend little forward below. Isthmus broad. Inner edge of shoulder girdle without fleshy flaps. Branchiostegals 5. Scales 48 to 72 in axial lateral series, mostly ctenoid, some cycloid on nape, breast and belly. Head scaled above behind eyes. Upper half of opercle scaled. Preopercle half way with longitudinal band of scales. Patch of postocular scales.

1753

Longitudinal mucous canals from mouth angle to preopercle, another along lower jaw to hind edge of preopercle. Dorsals separated, first with 7 to 9 flexible spines, second with 14 or 15 rays. Anal with 12 to 14 rays. Caudal obtuse, shorter than head. Pectoral with or without free silk like rays, fin base scaly. Ventrals united, oblong, below pectoral.

Sagamia was supposed to differ in the presence of free silk like rays on the pectorals above.

Acanthogobius alicia (Herre) ¹⁷⁵⁴

Aboma alicia Herre, Raffles Mus.
Bull., No. 12, p. 10, pl. 7, May 1936
(type locality, Reef in Singapore
Harbor).

Analysis of Species

1755

a.¹ Scales 32 in lateral series; sides of head naked. gracilli.

a.² Scales 35 to 40 in lateral series; head naked. lactipes.

a.³ Scales 55 to 75 in lateral series; top and sides of head scaly.

b.¹ Second dorsal rays I, 12 to 14; caudal peduncle slightly shorter than soft dorsal base. flavimanus.

b.² Second dorsal rays I, 18 to 20; caudal peduncle shorter than half base of soft dorsal. hastata.

Acanthogobius graeffii (Günther)¹⁷⁵⁶

Gobius graeffii Günther, Journ. Mus.
Godeffroy, vol. 6, pt. 11, p. 179, 1877
(type locality, Fresh water of Namusi
[Vitu Levu, Fiji]).

Aboma graeffii Jordan and Seale, Bull.
Bur. Fisher., vol. 25, p. 396, 1905 (1906)
(reference).

Aboma graeffii Fowler, Mem. Bishop Mus.,
vol. 11, no. 5, p. 362, 1931 (note).

Gobius petrophilus var. ocellata (not
Gobius ocellatus Day) Kner, Sitzb. Ber.
Akad. Wiss. Wien, vol. 57, pt. 1, p. 326, 1868
(type locality, Vitu Levu, Fiji).
Aboma ocellata Fowler, Mem. Bishop
Mus., vol. 10, p. 412, 1928 (copied).

1757

Depth 5; head $3\frac{1}{2}$, moderately flat below. Snout not longer than eye; eye moderately large, inclined above, not ^{very} closely set; mouth inclined, reaches opposite front of eye.

Scales 32 in lateral series; 11 transversely between dorsal and anal; predorsal with small scales extending forward to eye. Side of head naked.

D. VII-10, fin low; A. 7; caudal rounded; ventral nearly reaches vent, with wide funneled like membrane.

Color in spirits nearly uniform, with very obscure marbling and blotches on fins.

Length 51 mm.

Fiji, in fresh water.

(Günther.)

1758

Acanthogobius lactipes (Hilgendorf)

Gobius lactipes Hilgendorf, Vitzs. Ber.
Naturf. Freund. Berlin, p. 109, 1878
(type locality, Tokyo, Japan).

Aboma lactipes Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, p. 372,
1900 (Tokyo; Tonegawa); vol. 24, p.
67, fig. 10, 1901 (Matsushima,
Aomori; Tokyo, Tsuruga, Enoshima,
Annot. Zool. Japon., vol. 3, p. 113, 1901 (R. Tone; Yokohama);
Tone River); — Jordan and Hubbs,
Mem. Carnegie Mus., vol. 10, no. 2, p. ,
June 27, 1925 (Soochow). — Reeves,
Journ. Pan-Pac. Res. Inst., vol. 2, no.
3, p. 13, July - Sep. 1927 (reference).

Aboma latipes Chu, Biol. Bull. St.
John's Univ., no. 1, p. 163, Jan. 1931
(reference).

Acanthogobius lactipes Yamizama, ¹⁷⁵⁹
Jap. Journ. Zool., vol. 7, No. 1, p. 84, 1936
(Usu, Lake Hattirô-gata, Abita,
Hamurikawa, Kesen, Arahama,
Lake Kasumiga-ura; Ariake
Sound).

Aboma trushimae Jordan and
Snyder, Proc. U. S. Nat. Mus., vol. 23,
p. 759, 1901 (type locality, Sasuna,
Tusima); vol. 24, p. 69, fig. 11, 1901
(type).

U. S. N. M., no. 49864. Matsushima
~~Bay~~, Japan. D. S. Jordan and
J. O. Snyder. Length 45 to 56
mm. Seven examples.

U. S. N. M., no. 49915. Zone River,
Japan. K. Kishinouye. Stanford
University. Length 47 to 52 mm.
Two examples.

U. S. N. M., no. 49954. Enoshima,
Japan. D. S. Jordan and J. O. Snyder.
Length 58 to 64 mm. Two
examples.

U. S. N. M., no. 71418. Same
Rikunoku, Arigawa River,
Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length
78 to 90 mm. Four examples.

U. S. N. M., no. 71448. Shiogama,
Rikuzen, Japan. Bureau of
Fisheries. Albatross Expedition 1906.
Length 42 to 64 mm. Forty-six
specimens.

U. S. N. M., no. 105129. Lianchikhe
River, near Vladivostok, Kamchatka.
August 14, 1925. A. A. Taranetz.
Length 49 mm.

1763.

Acanthogobius flavimanus (Schlegel)

Gobius flavimanus Schlegel, Fauna
Japonica, Poiss., pts. 7 to 9, p. 141, pl. 74,
fig. 1, 1845 (type locality, Nagasaki).
— Bleeker, Verhand. Batavia. Genoot.
(Nal. Ichth. Japan), vol. 25, p. (16) 42,
1853 (Nagasaki); Act. Soc. Sci. Ind.
Nederl., vol. 3, no. 3, p. 6, 1857-58
(Japan). — Günther, Rep. Voy.
Challenger, vol. 1, pt. 6, p. 67, 1880
(Yokohama). — Károli, Termesz.
Hízetek, Budapest, vol. 5, p. 165,
1881 (1882) (Nagasaki; Hirado). — Shibawa
and Matsuura, Cat. Fish. Mus. Tokyo,
p. 38, 1898.

Cat. Fish. Brit. Mus., vol. 3, p. 77, 1861 (copied).
— Martens, Preuss. Exped. Ost Asien, vol. 1, p. 392,
1876 (Yokohama). — Günther,

Acanthogobius flavimanus Gill, Proc. ¹⁷⁶⁴
Acad. Nat. Sci. Philadelphia, p. 145,
1859 (Shimoda). — Jordan and
Snyder, Proc. U. S. Nat. Mus., vol. 24,
p. 98, 1901 (Hakodate, Onomichi,
Kurume, Nagasaki, Wakanoura,
Misaki, Matsushima, Aomori,
Tokyo, ^{Annot. Zool. Japon., vol. 3, p. 113, 1901 (Nagasaki, Yokohama).} Tsuruga, Enoshima, Niigata,
Osaka); — Reeves, Journ. Pan-Pac.
Res. Inst., vol. 2, no. 3, p. 13, July-
Sep. 1927 (Swatow, Chefoo, Kweichow).
— Chu, Biol. Bull. St. John's Univ.,
no. 1, p. 164, Jan. 1931 (reference). —
Tomiyama, Jap. Journ. Zool., vol. 7,
no. 1, p. 85, 1936 (Aomori, Torai, Korea).
[Anonymous, Illustrat. Jap. Aquat. Pl.
Animals, vol. 1, pl. 47, fig. 6, 1934.]

1765

Gobius stigmatonothus Richardson,
Voy. Sulphur, Ichth., p. 147, 1844
(type locality, Canton); Ichth.
China and Japan, p. 205, 1846
(Macao). — Günther, Cat. Fish.
Brit. Mus., vol. 3, p. 76, 1861 (copied).

Acanthogobius stigmatonothus Reeves,
Journ. Pan-Pac. Res. Inst., vol. 2,
no. 3, p. 13, July - Sep. 1927 (reference).
— Chu, Biol. Bull. St. John's
Univ., no. 1, p. 164, Jan. 1931 (reference).

Gobius stigmathonus Richardson,
Fish. China and Japan, p. ~~85~~ 147, 1846
(type locality, Canton).

Aboma snyderi Jordan and Fowler,
Proc. U. S. Nat. Mus., vol. 25, p. 575,
fig. , 1902 (type locality, Aomori,
Japan).

U. S. N. M., no. 45341. Fusan,
Corea. 1885. P. L. Jouy. Length
154 mm. As Acanthogobius
stigmathonus.

U. S. N. M., no. 38794. Tokyo, Japan.
Department of Education of Japan.
Length 151 to 155 mm. Two examples.

U. S. N. M., no. 50762. Nomori,
Japan. U. S. Jordan and J. D. Snyder.
Length 45 mm. As Aboma
snyderi.

U. S. N. M., no. 71387. Shiogama,
Rikuzen, Japan. Albatross Expedition
1906. Length 35 to 56 mm. Fifteen
examples. As Aboma snyderi.

U. S. N. M., no. 45328. Fusan, Korea.

P. L. Jouy. Length 145 mm.

U. S. N. M., no. 45336. Fusan, Korea.

P. L. Jouy. Length 193 to 196 mm.

Two examples.

U. S. N. M., no. 45352. Japan.

P. L. Jouy. Length 77 to 109 mm.

Nine examples.

U. S. N. M., no. 49877. Wakanoura,

Kii, Japan. D. S. Jordan and J. D.

Snyder. Length 70 mm.

U. S. N. M., no. 49878. Kurume,

Japan. D. S. Jordan and J. D. Snyder.

Length 82 to 99 mm. Three examples.

U. S. N. M., no. 49879. Chikugo

River, Kurume, Japan. D. S. Jordan

and J. D. Snyder. Length 82 to 88

mm. Four examples.

U. S. N. M., no. 49939. Tokyo,

Japan. D. S. Jordan and J. D.

Snyder. Length 146 to 184 mm.

Six examples.

U. S. N. M., no. 49961. Yodo River,
Japan. D. S. Jordan and J. Q.
Snyder. Length 38 to 70 mm.
Two examples.

U. S. N. M., no. 49963. Iwuroga,
Japan. D. S. Jordan and J. Q.
Snyder. Length 36 to 49 mm.
Five examples.

U. S. N. M., no. 49984. Wakanoura,
Kii, Japan. D. S. Jordan and
J. Q. Snyder. Length 129 to 185
mm. Six examples.

U. S. N. M., no. 57486. Japan.
P. L. Jouy. Length 153 mm.

U. S. N. M., no. 59561. Matsue-
shima Bay, Japan. Dr. H. M.
Smith. Length 102 mm.

U. S. N. M., no. 71096. Tokyo,
Japan. Bureau of Fisheries.
Albatross Collection. Length 61 to
182 mm. Eight examples.

U. S. N. M., no. 71117. ¹⁷⁷⁰Shiogama,
Rikuzen, Japan. Bureau of
Fisheries. Albatross Expedition
1906. Length 110 to 172 mm.
Seven examples.

U. S. N. M., no. 71324. Hakodate,
Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length
134 to 193 mm. Four examples.

U. S. N. M., no. 71339. Shimizu,
Japan. Bureau of Fisheries.
Albatross Expedition 1906. Length
137 mm.

U. S. N. M., no. 71536. Haido,
Ogo Islands, Japan. Bureau
of Fisheries. Albatross Expedition
1906. Length 55 to 112 mm. Five
examples.

U. S. N. M., no. 105145. ^{near} Vladivostok,
Svanchikhi River, Siberia. August
14, 1925. Length 163 mm.

1771

Acanthogobius hasta (Schlegel)

- Gobius hasta Schlegel, Fauna Japonica, Poiss., pts. 7 to 9, p. 144, pl. 75, fig. 1, 1845 (type locality, Nagasaki, Japan).
— Bleeker, Verh. Batavia. Genoot. (Nat. Ichth. Japan), vol. 25, p. 16, 1853 (reference); Ned. Tijds. Dierk., vol. 2, p. 58, 1865 (Amoy). —
Günther, Ann. Mag. Nat. Hist., London, ser. 4, vol. 12, p. 241, 1873 (Shanghai); ser. 4, vol. 13, p. 155, 1874 (Chefoo). —
Sauvage, Bull. Soc. Philom. Paris, ser. 7, vol. 5, p. 106, 1881 (Swatow).
— Rutter, Proc. Acad. Nat. Sci. Philadelphia, p. 85, 1897 (reference).
— Günther, Ann. Mag. Nat. Hist., London, ser. 7, vol. 1, p. 260, 1898 (Newchang).
— Károli, Termesz. Füzetek, Budapest, vol. 5, p. 165, 1881 (1882) (Yokohama).

1772

Synechogobius hasta Bleeker, Ned.
Tijds. Dierk., vol. 4, p. 129, 1873 (1874)
(Amoy). — Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 24, p. 102,
1901 (copied) ^{Amoy. Zool. Japan, vol. 3, p. 113, 1901 (Kagasaki).} — Herre, Gobies of
Philippines, p. 267, pl. 21, fig. 2,
1927 (Amoy).

Acanthogobius hasta Reeves, Journ.
Pan-Pac. Res. Inst., vol. 2, no. 3, p.
13, July-Sep. 1927 (reference). —
Chu, Biol. Bull. St. John's Univ.,
no. 1, p. 164, Jan. 1931 (reference). —
Tomiyama, Jap. Journ. Zool., vol. 7,
no. 1, p. 85, 1936 (Ariake Sound,
Keizyo, Korea).

- Gobius ommaturus Richardson, Voy.
Sulphur, Zool., ^{Fishes} ~~vol. 3~~, p. 146, pl. 55,
 fig. 1-³ 4, 1844 (type locality,
 Woodung at mouth of
 Yang-tze-kiang; Canton); Ichth. China
 and Japan, p. 205, 1846 (Macao).
 — Günther, Cat. Fish. Brit. Mus.,
 vol. 3, p. 77, 1861 (Amoy). — Martens,
Preuss. Exped. Ost Asien, vol. 1, p.
 392, 1876 (Shanghai). — Peters,
Monatsber. Akad. Wiss. Berlin,
 p. 922, 1880 (Kingpo); — Rutter,
Proc. Acad. Nat. Sci. Philadelphia,
 p. 85, 1897 (Swatow). — Rendahl,
Arkiv for Zool. Stockholm, vol. 16,
 p. 23, 1924.
 — Károli, Tenness. Füzetek, Budapest, vol. 5,
 p. 165, 1881 (1882) (Nagasaki).

Acanthogobius ommaturus Bleeker,
 Ned. Tijds. Dierk., vol. 4, p. 128, 1873
 (1874) (^{Yang-tse-kiang} Amoy; Shanghai; 1). — Jordan and
Seale, Proc. U. S. Nat. Mus., vol. 29,
 p. 528, 1905 (Shanghai). — Herre,
 Gobies of Philippines, p. 266, 1927
 (Amoy). — Reeves, Journ. Pan-
 Pac. Res. Inst., vol. 2, no. 3, p. 13,
 July - Sep. 1927 (reference). —
Chu, Biol. Bull. St. John's Univ.,
 no. 1, p. 164, Jan. 1931 (reference).

Actinogobius ommaturus Bleeker,
 Verh. Kon. Akad. Wet. Amsterdam,
 vol. 18, no. 5, p. 3, 1879 (China).

1775

Depth 5 to $6 \frac{2}{5}$; head $2 \frac{7}{8}$ to $3 \frac{1}{3}$, width $1 \frac{3}{4}$ to $1 \frac{4}{5}$. Snout $2 \frac{7}{8}$ to 3 in head; eye $5 \frac{2}{3}$ to 7, 2 to $2 \frac{3}{5}$ in snout, greater than interorbital in young to subequal with age; maxillary reaches to front eye edge for to first fifth in eye, length $2 \frac{2}{5}$ to $2 \frac{3}{4}$ in head; teeth in bands in jaws, simple, conic, rather large on outer series little enlarged; tongue truncate; interorbital $7 \frac{2}{3}$ to 9, low, depressed or flattened. Gill opening lateral, restricted, only extends forward far as hind preopercle edge. Gill rakers 3 + 8, short points, $\frac{1}{3}$ of gill filaments, which $1 \frac{1}{4}$ in eye.

Scales 52 in ^{axial} lateral ^{series} ~~line~~ to caudal base and 5 or 6 more on latter; 19 transversely between

1776

second dorsal and anal origins;
27 to 32 predorsal scales.
Head largely naked, with few
scales on opercle above, and
postocular region. Chest, breast
and prepectoral region largely
naked, scales present largely
obsolete. Small scales on lower
sides of abdomen, predorsal
and back anteriorly, also caudal
base, and large on tail. Lines
of ^{papillae} ~~pothet~~ not very distinct on
head. Horizontal line on cheek
below ^{and} ~~on~~ along lower ^{edge of lower} limb of
preopercle. Scales with 15 to 21
basal radiating striae; 31 to 35
apical denticles, slightly above
and below toward scale edges;
circuli rather fine.

D. IX - I, 19, I, second spine
 $2\frac{2}{5}$ to $2\frac{4}{5}$ in total head length,
first branched ray $2\frac{1}{2}$ to 3;
A. I, 16, I, second branched ray 4

1777

to $4 \frac{1}{5}$; caudal $1 \frac{1}{3}$ to $1 \frac{3}{4}$, median rays longest with fin rounded behind; least depth of caudal peduncle $4 \frac{1}{4}$ to $4 \frac{1}{3}$; pectoral $1 \frac{7}{8}$ to 2, rays 19; ventral rays I, 5, fin $1 \frac{3}{4}$ to $1 \frac{4}{5}$ in total head length. Anal papilla small, depressed, triangular flap, long as pupil.

Brown, paler below. Iris ^{gray}. Spinous dorsal light brown, each spine darker brown terminally. Soft dorsal pale brown, with 6 or 7 dark brown longitudinal narrow bands. Caudal brown, dark brown terminally, and dark blotch diffused basally. Other fins all lighter brown.

China. This species is quite variable. Many of small specimens show more elaborate papilliferous ^{lines} and scales developed on breast.

1778
U. S. N. M., no. 56418. Shanghai,
China. P. L. Jouy. Length 110 mm.

U. S. N. M., no. 86346. China.
A. de C. Sowerby. Length 76 to
138 mm. Eight examples.

U. S. N. M., no. 86382. China.
A. de C. Sowerby. Length 53 to 60
mm. Two examples.

U. S. N. M., no. 85870. China.
A. de C. Sowerby. Length 86 to
194 mm. Five examples.

U. S. N. M., no. 86,963. Foochow, ¹⁷⁷⁹
China. A. de C. Sowerby. Length 58
to 153 mm. Seven examples.

U. S. N. M., no. 87005. Shanghai,
China. A. de C. Sowerby. Length
200 mm.